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Vol. XV. No. 171. Old Series. MARCH, 1882. Vol. XI. No. 3. New Series.

THE CINCINNATI MEDICAL NEWS.

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EDITED BY

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Fellow of American Academy of Medicine, *Etc.*

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Respectfully submitted, R. OGDEN DOREMUS, M. D., LL. D.
Prof. Chemistry and Physics, College City of New York,
and Prof. Chemistry and Toxicology, Bellevue Hosp. Med. Col.

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THE
CINCINNATI MEDICAL NEWS.

Vol. XV. No. 171. Old Series. | March, 1882. | Vol. XI. No. 3. New Series.

Original Contributions.

Other Symptoms of Neurasthenia (Nervous Exhaustion).

BY GEO. M. BEARD, M. D., OF NEW YORK.

In a paper read before the New York Academy of Medicine, and published in the *Virginia Medical Monthly* for June, 1878, I described certain symptoms of Neurasthenia (nervous exhaustion) as follows:

Tenderness of the scalp (cerebral irritation, cerebrasthenia); tenderness of the spine (spinal irritation, myelasthenia); tenderness of the teeth and gums; tenderness of the whole body (general hyperæsthesia); general or local itching; abnormalities of the secretions; vague pains and flying neuralgias; flushing and fidgetiness; tremulous and variable pulse with palpitation; sudden giving way of general or special functions; special idiosyncrasies in regard to food, medicine, and external irritants; sensitiveness to changes in the weather; a feeling of profound exhaustion unaccompanied by pain; ticklishness; desire for stimulants and narcotics; insomnia; nervous dyspepsia; partial failure of memory; deficient mental control; seminal emissions; spermatorrhea; partial or complete impotence; changes in the expression of the eyes and countenance; mental depression, with general timidity; morbid fear of special kinds, as agoraphobia (fear of places); astraphobia (fear of lightning); sick headache and various forms of headache; disturbances of the nerves and organs of special sense; localized peripheral numbness and hyperæsthesia; general and local chills and flashes of heat; local spasms of muscles.

The above list is not only not exhaustive, but a number of the phenomena embraced under the various heads have been described thus far but incompletely.

I purpose, in the present essay, to supplement the clinical picture of this very frequent and little studied nervous disease by analyzing somewhat more in detail some of the symptoms already noticed, and by describing others that, so far as I know, have not been previously described, at least, not in their relation to neurasthenia.

Some of the above symptoms, when they are mentioned at all in works on diseases of the nervous system, have been and now are referred to under such headings as cerebral anæmia, or hyperæmia, or general anæmia, or hysteria, or hypochondriasis, or oxaluria; and some of them are mentioned in connection with structural lesions, as ataxy and muscular atrophy, and by many are regarded as essential parts of the clinical image of these grave disorders.

DEFICIENT THIRST AND CAPACITY FOR ASSIMILATING FLUIDS.

Quite recently a physican who consulted me in regard to himself, called my attention to the highly interesting fact that he rarely drank water either at meals or between meals; and he stated that the average quantity of liquid that he consumed was far below the normal standard. Investigation of other cases of neurasthenia has convinced me that this deficiency of thirst is one of the symptoms of that state, and it would appear that it is not an unusual symptom, but exists in not a few cases; there are many who for years have a poor appetite for fluids as they have a poor appetite for solid food; they live on a small quantity of liquid, and, perhaps, without suspecting it until their attention is directed to the fact. There are those who find that if they take much liquid the stomach suffers even when little or no solid food is mingled with it. One advantage, with some disadvantages, of the free use of beer with our German friends is in the quantity of fluid that they thereby imbibe—the water of the drink more than the alcohol. Drinking milk has a similar advantage.

When we remember that the body is composed mostly of water, we can easily see that there is a danger of starving for want of simple liquid, just as under the influences of our civilization, we are starving for want of fatty food.

There is no question that the Europeans, who are far less nervous than the Americans, use far more liquid nourishment; and it is also a fact, more and more impressed on my mind, that many neurasthenic patients are very temperate, if not total abstainers, and some abstain even from tea and coffee.

ABNORMAL DRYNESS OF THE SKIN, JOINTS AND MUCOUS MEMBRANES.

In some cases of neurasthenia the skin of the whole body is unnaturally dry; this is especially and most readily noticed in the hands, but all parts of the surface may present this peculiarity. A scaliness or scurfiness may accompany this dryness, as though there were a deficiency of fluids and of sebaceous secretion. There would also appear to be a relation between this condition and a disinclination to drink, or use fluids freely.

A young lady of twenty-one, in addition to many other neurasthenic symptoms, had dryness of the scalp, eyes and ears, especially in the morning; her eyes and ears, would be dry and hot, and in the ears a thin skin would form, and fine scales would be thrown off. These symptoms were not constant; they would leave entirely for a number of days, and then, without any apparent cause, return—thus following the law of all other symptoms of neurasthenia.

Dryness of the joints is also observed in the nervously exhausted. How the joints may suffer in grave spinal diseases, such as ataxy, is well known; but in these functional maladies of which neurasthenia is a type, the joints may suffer, though in a less severe manner. Deficiency of the secretion, with dryness and cracking sound on movement, I have noticed in a number of cases; in one striking case of musician's cramp, cracking of the joints is noticed in the affected fingers.

SWEATING HANDS, WITH REDNESS.

Sweating of the hands—of the palmar surface, or of the entire hand--palmar hyperidrosis--is a symptom of neurasthenia at once so interesting and so frequent, that I wonder that the literature of the subject is so meager.

Very frequently indeed this symptom is one of the results and accompaniments of sexual debility, especially when caused by masturbation; but it can hardly be regarded as diagnostic of sexual exhaustion, nor would I, on the fact alone, decide that the genital system was primarily at fault. This phenomenon—abnormal perspiration of the hands—is certainly more common in males than in females, although it occurs, as, indeed, all forms of hyperidrosis occur, in both sexes. The milder phases are common enough, but there are severe manifestations that this symptom may assume, which seem well nigh beyond belief. Thus a young man now under my care is so distressed thereby that he threatens suicide unless he is permanently cured. In his case there are various evidences of a bad inheritance, a poor constitution, although this palmar sweating is just now the only very annoying expression of the depraved diathesis. A young lady in the northern part of the State is compelled to take a number of handkerchiefs with her when she goes to school, and on her return they are all saturated from the excessive perspiration of her hands. My friend, Dr. Josiah Roberts of this city, tells me that in a similar case, lately brought to his attention, there was clear proof of uterine disease.

The intimate relation of this symptom to the nervous system is shown in many striking facts. Thus one young man who consulted me would be attacked periodically—at ten and four o'clock—and whenever he was at sea the symptom would utterly leave him. In one of my cases the slightest emotion would instantly saturate the hands as thoroughly as dipping them into a pail of water. The effort to shake hands is sufficient to produce this effect. Redness of the whole hand—erythema—sometimes attends this palmar sweating, and in one of my cases the ears are as red as the hands.

CONVULSIVE MOVEMENTS, ESPECIALLY ON GOING TO SLEEP.

Nervous sufferers, just as they are dropping off to sleep, are sometimes suddenly and painfully awakened by a violent, spasmodic movement of an arm, or leg, or of the whole body. This appears without any warning, and is most likely to occur when preceded by unusual excitement or fatigue. In some cases there will be a recurrence of these spasms, so that much difficulty is experienced in getting to sleep. I have known instances where the whole body seemed to be thrown off the bed, or rather, the sensation was as though the body were projected upward. This symptom is not so alarming as some of those who experience it believe. It indicates an exhausted, a worn condition of the nervous system; but it is not as ominous for evil as many other phenomena that belong to the nervously exhausted state. A friend of mine—a public speaker, constantly before audiences, and always at work—with a frame of unusual size and an extraordinary capacity for enduring mental excitement and toil—tells me that with all his vigor he has been annoyed by these jerkings on falling to sleep, although he has no other evidence of neurásthenia.

It is probable that these convulsive symptoms on dropping to sleep are the effect and sign of congestion in the exhausted nerve centers, and occur while passing out of the waking into the sleeping condition, because the inhibitory or controlling power of the waking state is removed.

ATONIC VOICE.

When neurasthenia lays its hands on a man it is liable to leave its impress on every organ and function of the body; from the crown to the toe there is not a fiber that is safe from attack. If some parts escape in one individual, they suffer in others. If at one stage of the malady certain regions are unaffected, it may be only that they may be attacked with all the greater violence at another stage. Thus the hair, the scalp, the eyes, the ears, the nasal and respiratory passages; the brain, in whole or in part, the cranial nerves, the heart, the spinal cord in any portion, the sensory and motor nerves, the stomach and bowels, the reproductive system, the skin, the nails, the secretions, the excretions, the absorbents—all are objects of assault.

It is not strange, therefore, that there should be a neurasthenic voice, just as there is a neurasthenic eye, a neurasthenic stomach and genitals. The chief peculiarity of the neurasthenic voice, is softness, faintness, want of courage and clearness of tone. These terms, through vague, express perhaps, as well as it is possible to do in words, how this voice deviates from the normal voice, but at best verbal descriptions are faulty, and far inferior to even a single living illustration. To a physician accustomed to see these cases and to observe the voice, there is but little difficulty in at least suspecting the diagnosis by this symptom alone. This neurasthenic voice somewhat resembles the peculiar voice of the deaf; and yet it is not precisely like that, and can usually be distinguished from it. A neurasthenic sufferer may have the muscle of an athlete, and be so strong that a hard day's toil is but play, and yet speak in a voice which in quality and volume of sound suggests the beginning of convalescence from a severe fever.

"The voice," says Emerson, "is a delicate index of the soul," and with scientific truth the same philosopher asserts, that the orator can often tell by the quality of his own speech, at the beginning of an oration, or sermon, whether he is or not in the mood of speaking, whether he is to be eloquent or utterly fail.

A dissolute life, especially in women, always registers itself in the voice, impressing a coarseness that in its quality is almost diagnostic. The queens of song are never grossly impure.

OXALATES AND URATES IN THE URINE.

The relation of oxalate of lime to various nervous symptoms was long ago pointed out by Golding Bird, and the importance of examining the urine for the deposits of the oxalates was strenuously insisted on by him; but the true relation of such deposits to the nervous system seems not to have been fully understood either by him or by those who have since written on the subject.

As a matter of routine, I have, for years, been accustomed to have the urine of my neurasthenic patients examined, and in the majority of cases it is found that the oxalates, and in some cases, the urates, are in great excess. Amorphous urate deposits are noticed, also uric acid crystals.

The term "oxaluria," so often applied to this condition, is quite analagous to the term "spinal irritation," as applied to tenderness of the cord with accompanying symptoms, so often observed in neurasthenia. To the employment of such terms there can be no objection, provided those who use them understand that in scientific strictness they do not mean disease of a distinct character, but are really results and expressions of neurasthenia, malnutrition of the nervous system. The urine of the neurasthenic is often, if not usually, abnormally acid; and spermatozoa are frequently found even where there is no special reason on the part of the patient, or of the physician, to suspect any marked degree of seminal weakness. In a philosophic sense these oxalates and urates, and the acidity and spermatozoa, are like spinal irritation, cerebral irritation, neurasthenia, asthenopia, and dyspepsia, results, effects, in a word, symptoms, and if the cause at all of other symptoms, are but secondarily so.

GAPING AND YAWNING.

As evidences of temporary fatigue, gaping and yawning are familiar enough even though their physiology may be obscure. In organic disease of the brain also, frequent and prolonged gaping has been noticed.

In one case of glosso-labial paralysis that I saw a number of years ago, this symptom of gaping was so frequent, and the act so prolonged, as to be ludicrous.

In neurasthenia, gaping, yawning and stretching may appear like the other symptoms mentioned, and like them also the attacks come and go; they are quite apt to follow overexertion or excitement, even when there has been no loss of sleep. A neurasthenic patient, now under my care, tells me that after long reading a newspaper in the morning after breakfast, he is troubled with gaping, though no other evidence of weariness annoys him; in his case the eyes are asthenopic, and prolonged use sometimes brings on various symptoms.

DILATED PUPILS.

Dilatation of the pupils is so often seen in neurasthenia, especially in the sexual forms, that it may be considered as an important fact to be noted in the study of a case. I do not look upon this symptom as in any sense diagnostic, although it is so often associated with a history of genital disturbance, for there are cases of sexual exhaustion where it does not exist, and it sometimes exists where there are no proofs of sexual trouble.

Abnormal activity of the pupil—sudden and frequent alternations between contraction and dilatation—is a sign of neurasthenia, or, at least, of nervous irritability, of perhaps more importance than mere dilatation, just as in organic diseases of the cord, sluggishness of the pupils, slowness to contraction or dilate, has been recently suggested as a better diagnostic sign than mere contraction of one or both pupils.

SHOOTING PAINS SIMULATING THOSE OF ATAXY.

If there be any difference between the familiar shooting, lightning-like pains in the extremities that have so long been considered as peculiar to ataxy, and the shooting pains of neurasthenia, I have not been able as yet to find it out. Generally these neurasthenic pains are milder than those of ataxy, but this average fact does not interfere with the fact of observation, that this difference in degree is not of itself sufficient to make it possible to establish the differential diagnosis; for the shooting pains of ataxy are by no means always severe, and in many cases of the disease do not exist at all. The mistake of writers in so strenuously insisting on the diagnostic importance of these shooting pains, has been, and is, the source of terrible annoyance to physicians, especially who happen to be themselves sufferers from these neurasthenic symptoms.

The same remark applies to fibrillary contractions,which have been looked upon as indicating muscular atrophy, but which, as I have elsewhere stated, may consist of one of the many symptoms of neurasthenia.

PECULIARITIES OF PAIN IN THE BACK.

In neurasthenia all parts of the back may be the seat of pain, although certain districts are more affected than others. There may be tenderness when there is no pain, and conversely pain, even severe pain, when there is no tenderness. There may be much distress in the loins and over the hips, when careful examination shows no tenderness anywhere.

This pain in the hips and loins is something quite different from ordinary neuralgia or sciatica; it rather resembles muscular rheumatism or a common cold, and is indeed often confounded with one or both of these diseases even by able diagnosticians. The liability to confound irritation of the upper part of the spine at the nape of the neck with rheumatism is very great; the symptoms, indeed, are quite the same—pain, stiffness, aching, inability to move the head without discomfort. Sometimes this condition perfectly simulates wry neck, and is mistaken for it. One of the very ablest neurologists in Germany, on being consulted by a case of irritation in the upper part of the spine, made diagnosis of rheumatism, and treated the patient accordingly. This back pain, and the tenderness that may or may not accompany it, fluctuates like all these neurasthenic symptoms; to-day they are present in full force, to-morrow they are all gone, but, on any provocation, are liable to return. They fly about in every direction; now just below the shoulder blade; now in the center of the spine; and at another time between the shoulder blades, or in the middle lumbar region; sometimes with heat and burning, at others with biting, penetrating sensations, or a feeling as though ants were crawling just under the skin.

HEAVINESS OF THE LOINS AND LIMBS.

One of the most frequent complaints among the neurasthenic (myelasthenic form) is heaviness and vague aching of the loins and limbs, and sometimes of the whole body. This is a symptom hard to define in exact words, but it is very common, and it is a cause of great distress. This symptom is quite apt to follow over physical exertion, as in walking or standing, but may come on without any apparent or special exciting cause. This feeling so closely resembles rheumatism that it is often confounded with that affection by those who are unfamiliar with neurasthenia, and even one well acquainted with nervous exhaustion in all its forms, might, on first being called to a patient, mistake this heaviness and aching for a common cold, or for a rheumatic attack.* I have lately been consulted by a gentleman suffering from myelasthenia, where this aching of the lower part of the back and loins are almost the only subjective symptoms. In sexual exhaustion, pains in the loins and limbs, not amounting to neuralgia, but sufficient to be a severe annoyance, are frequent enough, but they are not restricted to the sexual variety of neurasthenia.

VARIETIES OF MORBID FEAR (PHOBIA).

There would seem to be almost no limit to the phases that morbid fear may assume in the nervously exhausted. These varieties of diseased apprehension have been observed for years, not only in the positively insane, but in the so-called hypochondriacal and melancholic; but they have not been regarded as worthy of careful scrutiny and analysis; the patients who complain of them have been dismissed, as merely imaginary, and the many accompanying symptoms which, when thoroughly studied, would have shed much light on the condition that gives rise to these morbid fears, have likewise been passed by.

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* How the symptoms of ataxy have been, and are, mistaken for rheumatism is well known to the physician.

Recently, however, science has endeavored to bring these vague phenomena into the realm of systematic observation, analyzing their minute manifestations, showing their relations and dependencies, and giving them, in certain cases where their frequency and positiveness would warrant, distinct names; thus astraphobia—fear of lightning—was described by me some years since; agoraphobia—fear of places—has been described by Westphal, of Berlin; and, still more recently, I have applied the term anthrophobia—fear of society—to that morbid apprehension of going into company, or of encountering human beings in any relation, which is so often seen in the nervously exhausted, especially in those sexually exhausted. One of the many phases of anthrophobia is inability to look in the face of one with whom we are conversing; this is seen frequently in sexual exhaustion, as all students of that form of nervous disease know; but it is no more restricted to that type alone than are any of the other symptoms that have been cited. Indeed, any form of exhaustion may give rise to any form of morbid fear, although, so far as I can judge from my own observation, sexual trouble—masturbation and excess—is at least one of the prominent factors in the majority of cases.

The general philosophy of this morbid fear in the neurasthenic (cerebrasthia) would appear to be that the debility of the brain—the nerve impoverishment—renders it impossible to meet responsibility, just as paraplegia makes it difficult or impossible to walk; morbid fear is indeed but a psychical paralysis, but of a functional rather than of an organic nature.

The world over, aversion of the eyes with a turning away of the face, is an expression of the emotion of humility and bashfulness, that is, of a feeling of weakness as compared with the person in whose presence we stand —an instinctive and involuntary recognition of the fact that, for the moment, our force is inferior to his. In neurasthenia this same principle appears as a pathological symptom—an expression of debility, of inadequacy, of incompetence. This aversion of the eyes is so constant a symptom in these neurasthenic patients, that I often make the diagnosis as soon as they enter the office, before a word has been spoken by either party, and even before the patient has had time to be seated. I have now under my care a young man with sexual exhaustion, who is so badly anthrophobic, that even when I take his head in my hands and hold it up, it is impossible to keep his eyes fixed on mine for more than an instant. A very intelligent and able friend, now under my professional care, displays this same characteristic, and I have often talked with him in regard to it.

Some of the phases of this morbid fear are very interesting and surprising, even to those who are most familiar with the caprices of the diseased nervous system. I have elsewhere published a brief account of the physician who consulted me in regard to himself for long-standing cerebrasthenia, one of the symptoms of which was inability to go away from his home or office, or place where he was stopping, to any considerable distance in a direct line. He had the muscular strength to walk twenty miles, but when summoned to a patient was often obliged to decline to attempt to go even half a mile, which was a great astonishment to his patients, who were well aware that even when unable to visit them he could work all day in his garden. Like many of these cases he had a morbid fear of visiting the place where he was first attacked by any of his ill feelings; thus he had been at one time prostrated in New York City, and felt incompetent to come here to consult me; accordingly, I met him by appointment in a distant city. In walking out with him one morning, I observed that he continually turned off to the side streets, so as to keep at a little distance from the hotel where we were stopping for the day, and, on my questioning him, he said that he could not go more than half a mile in a straight line, and that therefore he turned into the side streets so as to keep the hotel near at hand. The result was that we walked arm in arm, circumnavigating the hotel at a moderate distance, although not always keeping it in sight. The patient was not at all wearied, although the walk was a long one—in a direct line perhaps a mile or two.

I have now under care a patient whose morbid fear takes just the opposite phase: he can not go to a certain locality, but can go very near to it, and beyond that point his own will is often powerless to urge him forward. He was first attacked while in a lithographic establishment working at his trade, and from that hour he has found it hard or actually impossible to enter any building devoted to that business. One day he resolved that he would conquer what seemed to him and his friends a foolish whim, and started out for the shop, but on arriving in sight—about the distance of a block—he was compelled to stop; a cordon of policemen could not have been a more effective blockade; resolved not to be beaten, he retired a short distance, and approached the building from another direction, but was again brought up against the imaginary barrier, and so in succession all the points of the compass were tried with absolute failure.

He had a chance to work in Syracuse, and went to the depot to take the train for that city, but on entering the station and going up to the office, he burst into tears, and could not buy his ticket; he tried and tried, and finally gave up and returned home. He could have walked to Syracuse, but he could not reach out his hand and purchase the ticket for his fare. At another time he succeeded in reaching Cincinnati in quest of employment, and was directed to a lithographic establishment where he expected to be employed; but in spite of all his repeated trials he could only come within sight of the building, and he was forced to return to New York.

I have just been consulted by a physician who, as one of the effects and signs of cerebrasthenia, can not at times undertake any slight responsibility; thus he has sometimes allowed a large number of horse-cars to pass him before he could bring up the resolution to jump on board one of them; and yet his muscular strength at the time was excellent.

Inability to travel alone is one of the myriad forms of morbid fear, and is indeed quite the opposite of anthrophobia, just described. During the past year two cases of this kind have been under my observation—one a clergyman, the other a merchant, and both competent to attend to their respective duties: the first as teacher in a responsible position, the second as partner in a mercantile house; although both suffer, and, for years, have suffered from very many other symptoms of neurasthenia.

HOPELESSNESS.

When a patient is dying in the last stages of consumption or cancer, he is often, if not usually, hopeful; and sometimes he does not abandon the expectation of recovery even when on the edge of the grave. After friends have given up utterly, and the physician only comes to relieve, the patient himself is full of hope.

In functional nervous disorders, that are relievable if not curable, the reverse phenomenon is observed. The patient, even in the earlier and milder stages, is without hope, while the friends laugh at his fears and ridicule him for talking or thinking of his symptoms. A good example is found in an attack of sick headache, but nearly all the neuroses exhibit this phenomenon, in greater or less degree; as, for instance, writer's cramp, hay fever, musician's cramp, telegrapher's cramp, and the malady here under consideration, neurasthenia, in its various phases.

In organic, structural and incurable disease, such as cerebral paralysis, paraplegia, etc., the sufferer is far less likely to despair of relief.

The philosophy of this symptom of hopelessness appears to be similar to that of morbid fear, as above described. That is, an instinctive consciousness of inadequacy for the task before us. We are hopeless because our nerve force is so reduced that the mere holding on to life seems to be a burden too heavy for us. A certain amount of nerve strength is necessary to supply the courage requisite for simple existence. Abstaining from dying demands a degree of force, just as the mere keeping in an erect position—standing up without taking a single step—is only possible to those who have a certain quantity of strength. Abstaining from dying, like abstaining from falling, is in one respect a negation only, but neither is possible without an expenditure of force.

The despair of sea-sickness well illustrates this phenomenon. In the short space of an hour, or less, one can be reduced from a state of perfect bliss to perfect misery, simply from the perturbations caused by the motion of the vessel.

One time, when returning from England, our steamer collided with a sailing vessel in such a way and under such circumstances as to give just reason for the belief that we might be in serious peril. In the height of the excitement and alarm a sea-sick passenger came out from his room, where he had been shut up ever since our departure, and inquired what the trouble was all about. He was informed that our steamer was leaking and that we were fast sinking. "If that's all, I'll turn in again," he replied, and went back to his berth, whence he did not emerge until we all landed in New York.

In some cases of neurasthenia this hopelessness is intermittent, periodic, like attacks of inebriety or neuralgia, and these attacks are quite independent of all external conditions, although they may be excited and modified more or less by the environment.

PECULIARITIES OF INSOMNIA.

The different phases of insomnia in neurasthenic patients are exceedingly interesting.

One man finds no difficulty in getting to sleep on retiring, but soon wakes and must remain awake for the rest of the night. Another man rolls and tumbles for hours before he falls into oblivious slumber, but when once asleep does not usually wake until morning. I was recently consulted for a case of insomnia of many years' duration, where there had never been any difficulty in sleeping after getting to sleep.

Other sufferers report that they sleep in fragments—oases of repose in a desert of dreary wakefulness—but bad dreams constantly harass them so that in the morning they are less rested than they should be. Why a bad dream should be a bad symptom is not quite clear. Why a man disturbed by indigestion or exhausted nervously by excitement late in the evening, should dream of snakes and monsters instead of green fields and gardens, of death and murder instead of delightful society and experiences, has perhaps only this general explanation, that the normal action of the cerebral cells is designed to be, in the main, pleasurable, and that mental, like physical pain, is a symptom of something abnormal. It is also a question how far dreams are pathological. It would seem that in perfect health—if there be such a state—one might dream even unpleasantly; and yet there is no doubt that savages, and farmers, and, in general, those who live outdoors, depending on their muscles for their subsistence, dream far less than the in-door brain-workers. My guide in the woods of Maine and Northern New Hampshire, tells me that he very rarely dreams, and one cool, phlegmatic man, whom I met in that region last summer, assured me again and again that he never, in all his life, had a dream that he could recall; and with that class, as a rule, dreams of any kind, good or bad, are exceptional.

Some neurasthenic patients can only sleep by night—never by day, however wearied. Others can sleep by day; often fall to sleep when they especially desire to keep awake, but at night toss in painful activity.

Physical exercise also acts very capriciously with different persons. Thus one of my patients tells me that if he takes a long walk in the evening, he is more restless than usual that night; and yet he is a very strong man, capable of much physical and mental toil.

APPEARANCE OF YOUTH.

Persons afflicted with neurasthenia, very often, and I think in the majority of cases, where the condition is constitutional and long-standing, look younger than their years; they bear the weight of time more easily than the phlegmatic and the strong; and when between, say thirty-five and forty-five, will pass for five or ten years below their actual age. I have reached this generalization not hastily, but after much observation and reflection. Constantly I find myself astonished when a new patient, whom I have never before seen, tells me his age. I observe that those who have had a long battle with their morbid feelings, who have been perhaps disabled, crippled, or exiled by nervous incapacity, look ten years younger than their vigorous friends. The neurasthenic are, as a rule, less wrinkled and worn; they have less fat and muscle that furnish the materials for flabbiness and coarseness of feature. Their skins are thinner and softer, and show the blood more readily. They are also less likely to be attacked with those degenerative changes in the blood-vessels and the skin, that are the signs and results of age. In a word, they look young for the same reason that they live long.

There is a still wider generalization that can be verified—namely, that the nervousness that attends civilization is everywhere accompanied by this appearance of youth. The higher classes look younger than their years, the lower classes look older than their years. Some time since, when I was connected with the Nervous Department of Demilt Dispensary, New York, I noticed that the majority of the patients looked from five to ten years older than they were. This was true of both sexes, and in nearly all forms of nervous disease. Those between twenty and thirty appeared to be thirty-five or more, and only repeated questioning in some cases would convince me that there was not either ignorance or deception. But scarcely any of those patients were neurasthenic, for in that class neurasthenic and allied affections are very rare.

SELECTIONS.

Digestion—Indigestion.

BY E. N. CHAPMAN, A. M., M. D.,
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INDIGESTION in its broader signification embraces a large number of symptoms—dignified as diseases—attendant upon morbid action of the intestinal tube and its glands, those seated in its mucous coat and those pouring their secretions into its cavity. To treat these symptoms wisely, and bring order out of disorder, it is necessary to fully understand the physiological laws impressed upon the organs which prepare the food for absorption, and furnish the blood with the materials for its constant renewal. These laws, as fixed as those presiding over inorganic matter, will, if regarded, promote health and comfort, but will, if disregarded, induce disease and suffering. Their steady neglect always results, sooner or later, in functional disease of the stomach, bowels and digestive glands, and eventually in disorder of the whole economy. The casual light infringements of physiological laws are readily atoned for, as the natural powers promptly assert their supremacy and correct the evil; but when these have been continuous and reckless, there is no reprieve except by a long and strict obedience to dietetic and hygienic rules. No medication alone, however skillfully directed and faithfully followed, will be of avail. If drugs be needed, they must be used with a due regard to the normal functions, and calculated to assist in their restoration. Still, the main agencies by which to restore the normal functions are food, air, exercise, sunlight and environment. These being secured and aided, when requisite, by proper remedies, there is no reason why a complete recovery can not be attained in all the varied forms of indigestion, inasmuch as by this course of procedure the causes of disease are removed. To success, it is essential to prescribe a diet that will impose little labor upon the digestive organs, and will at the same time offer all the elements of nutrition to the blood.

It has been supposed that food is digested in the stomach: 1st, by coction or elixation; 2d, by putrefaction; 3d, by trituration; 4th, by fermentation; and, 5th, by chemical solution. The first theory is that of Hippocrates, the last, that of Spallanzani, who first discovered the solvent action of the fluid secreted by the stomach. To this fluid he gave the name gastric juice.

The experiments of Beaumont on St. Martin, between the years 1824 and 1833, gave a new impulse to the chemical theory and seemed to prove that the gastric juice is the chief, if not the only, agent in process of digestion. Its action he regarded as "purely chemical," one reducing all the varied ingesta to a homogeneous pulp, the chyme. He says, "I can see no more objection in accounting for the change effected on the food, on the supposition of a chemical process, than I do in accounting for the varied and diversified modifications of matter, which are operated upon in the same way."

The chemical theory was, after it had sway for many years, displaced by the older one, that of fermentation. The discovery of pepsin, a ferment body, seemed to settle the matter. And yet, from the insufficiency of this theory, as well as of all other theories, to account satisfactorily for the digestive process, one may even at this late day exclaim with Dr. Wm. Hunter: "Some physiologists will have it that the stomach is a mill; others that it is a fermenting vat; others again that it is a stewpan; but, in my view of the matter, it is neither a mill, a fermenting vat, nor a stewpan—but a stomach, gentlemen, a stomach!"

The more recent studies of physiologists have shown that the gastric juice does not combine with the food chemically; but, being mixed with it mechanically, induces by its presence certain changes, and then is reabsorbed into the circulation. The process is more akin to catalysis than fermentation, the catalytic body being the pepsin. The food is dissolved and reduced to a uniform mass; and yet starch, sugar and oil pass into the duodenum unmodified. Even meat, albumen, casein and gluten are not perfectly digested in the stomach; they are merely broken up, liquified and transformed into peptoms which have chemical relations different from the original nitrogenized substances. In the case of meat, the areolar tissue is dissolved, and the fibers disintegrated into a pultaceous mass. Still, under the microscope, the characteristic muscular striae are readily detected.

The cell walls of fat, starch, and other vegetable aliments are dissolved and their contents set free. The action of the gastric juice is not dissimilar to that which takes place in the case of albuminoids. When all the varied contents of the stomach reach the duodenum, the great work of digestion is continued and completed, as far as the intestinal tube is concerned, by the action of the duodenal, pancreatic and hepatic secretions. The action of each has not been well defined, but this much is certain, the chief part of digestion is performed in the duodenum by the aid of the secretions formed in its mucous coat, or poured into its cavity.

Notwithstanding these well established facts in physiology, physicians all over the world are to-day prescribing pepsin as though all food was fully digested in the stomach, and nothing more was needed when the stomach flagged than to give it extraneous aid. If, according to Dalton, it requires thirteen pints of gastric juice in the case of a dog to digest a pound of meat, and if, as he states, fifteen per cent. of this juice is pepsin, it would take an enormous amount of this substance as a medicine to supply a patient for a day. Were this quantity given, nothing but albuminoid substances and cellular, fibrous tissues would be acted upon, and no provision would be made for the dissolved nitrogenized matter, starch, sugar and fat as they pass into the duodenum. The difficulty could not be met by the simultaneous use of pancreatine, as, at this point of its progress, the food requires the duodenal and hepatic secretions as well as the pancreatic to complete the digestion and prepare the chyme for absorption.

Inasmuch as casein is more completely digested in the stomach than any other albuminoid, it will be conceded, I think, that a baby confined to the breast and having healthy passages excepting a fine admixture of curd, ought to be particularly benefited by the use of pepsin. A number of years since, being impressed with the reasonableness of this theory of digestion, I faithfully tried the best pepsins in the market—domestic and foreign, acid and neutral—without attaining the least advantage. The curd appeared in greater quantity and in larger pieces than before. With this experience I abandoned its use altogether, and directed my attention to the causes that interfered with the digestion.

The thousand and one changes on pepsin, and on pepsin and pancreatine, having been rung, and still the attainment not being equal to the promise, then attention was turned to prepared foods and those partly digested. Now, certainly, as all the elements of nutrition are in a concentrated form, and need but slight changes in the stomach and duodenum to prepare them for absorption, the patient can not fail to be nourished.

More recently it has been claimed that medicine has now attained such precision as to render it possible on a chemical basis to decide when to give and when to withhold any particular food or drug. To make muscle, fat, nerve, etc., is a simple matter. The poor consumptives have had a large experience in this plan of treatment. To their sorrow they have found themselves, not infrequently, wasting away day by day on a rich diet and free doses of cod-liver oil. This while, the state of the gastro-duodenal mucous membrane had been disregarded or assumed to have the average healthy condition. That this is not so, except in rare instances, is a matter of common observation. Indeed, disease of the lung may arise from a fault in digestion and assimilation and be hurried forward by over-crowding the stomach.

The observations of Beaumont throw a flood of light upon the varying condition of the gastric mucous membrane and its secretions.

"The inner coat of the stomach, in its natural and healthy state, is of a light or pale pink color, varying in its hues according to its full or empty state. It is of a soft, or velvet-like appearance, and is constantly covered with a thin, transparent, viscid mucus, lining the whole interior of the organ." When the stomach is empty "the rugæ appear irregularly folded upon each other, almost in a quiescent state, of a pale pink color, with a surface merely lubricated with mucus." When food is taken "the action of the vessels is increased, the color heightened; even the vermicular motions are excited. The small vascular papillæ begin to discharge a clear, transparent fluid, which continues abundantly to accumulate, as aliment is received for digestion."

In morbid conditions "the villous coat becomes somewhat red and dry; at other times, pale and moist, and loses its smooth and healthy appearance; the secretions become vitiated, greatly diminished, or entirely suppressed; the mucous coat scarcely perceptible; the follicles flat and flaccid, with secretion insufficient to protect the vascular and nervous papillæ from irritation."

"There are sometimes found on the internal coat of the stomach, eruptions, or deep red pimples; not numerous, but distributed here and there, upon the villous membrane, rising above the surface of the mucous coat. These are at first sharp, pointed and red; but frequently become filled with white, purulent matter. At other times, irregular, circumscribed, red patches, varying in size or extent, from half an inch to an inch and a half in circumference, are found on the internal coat. These appear to be the effect of congestion in the minute bloodvessels of the stomach. There are also seen at times, small aphthous crusts, in connection with these red patches. Abrasions of the lining membrane, like the rolling up of the mucous coat into small shreds or strings, leaving the papillæ bare for an indefinite space, is not an uncommon appearance."

One of the experiments of Beaumont on St. Martin shows how profoundly the stomach is impressed by indigestible, irritating articles. Several of these secured by silk strings were introduced into the stomach through the fistulous opening at 12 M. During the afternoon there was "considerable distress and uneasiness at the stomach, general debility and lassitude, with some pain in his head." The secretion of the stomach was "rancid and sharp."

The next morning, "the distress at the stomach and pain in the head continuing, accompanied with costiveness, a depressed pulse, dry skin, coated tongue, and numerous white spots, or pustules, resembling coagulated lymph, spread over the inner surface of the stomach, I thought it advisable to give medicine; and, accordingly, dropped into the stomach, through the aperture, half a dozen *calomel pills*, four or five grains each; which, in about three hours, had a thorough cathartic effect, and removed all the foregoing symptoms and diseased appearances of the inner coat of the stomach."

St. Martin, after eating irregularly and drinking immoderately for several days, said he felt well and relished his food, and yet Beaumont found that erythematous and aphthous patches had appeared on the lining membrane of the stomach, and that the gastric juice had become much vitiated.

There was no material change the day following the examination, but the second day "inner membrane of the stomach unusually morbid—the erythematous appearance more extensive, and spots more livid than usual; from the surface of which exuded small drops of grumous blood—the aphthous patches larger and more numerous—the mucous covering thicker than common, and the gastric secretions much more vitiated. The gastric fluids extracted this morning were mixed with a large proportion of thick ropy mucus and considerable muco purulent matter, slightly tinged with blood, resembling the discharge from the bowels in some cases of chronic dysentery. Notwithstanding this diseased appearance of the stomach, no very essential aberration of its functions was manifested. St. Martin complains of no symptoms indicating any general derangement of the system, except an uneasy sensation and a tenderness at the pit of the stomach, and some vertigo, with dimness and yellowness of vision, on stooping down and rising again—has a thin, yellowish brown coat on his tongue, and his countenance is rather sallow, pulse uniform and regular; appetite good; rests quietly and sleeps as well as usual."

In four days, during which he had been "confined to low diet, and simple, diluent drinks," and "not been allowed to taste of any stimulating liquors, or to indulge in excesses of any kind, the coats of the stomach were as clear and healthy as usual."

Beaumont remarks, "Diseased appearances, similar to those mentioned above, have frequently presented themselves in the course of my experiments and examinations. They have generally, but not always, succeeded to some appreciable cause. Improper indulgence in eating and drinking has been the most common precursor of these diseased conditions of the coats of the stomach. The free use of ardent spirits, wine, beer, or any intoxicating liquor, when continued for some days, has invariably produced these morbid changes. Eating voraciously, or to excess; swallowing food coarsely masticated, or too fast; the introduction of solid pieces of meat, suspended by cords, into the stomach; or of muslin bags of aliment, secured in the same way, almost invariably produced similar effects, if repeated a number of times in close succession. * * *

"It is interesting to observe to what extent the stomach, perhaps the most important organ of the *animal* system, may become diseased without manifesting any external symptoms of such disease. In the case of the subject of these experiments, inflammation certainly does exist to a considerable extent, even in an *apparent* state of health—greater than could have been believed to comport with the due operations of the gastric functions."

From these observations of Beaumont upon a healthy subject and under favorable conditions, it is quite certain that the mucous coat of the stomach is very prone to be inflamed by dietetic abuse, and its secretions checked and perverted; and, also, that the mere act of abstinence is usually sufficient to subdue the inflammation and restore a free and healthy secretion of the gastric juice. When St. Martin persisted in an injurious course of eating and drinking, the morbid condition became, more and more, aggravated until, at last, the digestive process was no longer possible. Under such circumstances, it would have been folly in Beaumont to have attempted, by artificial means, to force the digestion, as is now the habit of so many practitioners the world over.

From the promptness with which the inflammation subsided in St. Martin's case, when the stomach was left at rest, it is apparent that the mucous membrane was not actually inflamed like ordinary tissues of the body, but only assumed that appearance through an intense physiological congestion. In other words, the gastric mucous membrane is an erectils tissue, and is, by the influence of the ganglionic nerves, subjected to periods of great nervous and vascular action. This, in the normal state, is followed by involution; but in the abnormal, the congestion remains, and is intensified by continuous irritation.

From the number, amount, and importance of the secretions discharged into the duodenal cavity, it seems, a priori, that the activity going on in the nervous and vascular systems of the glands engaged in this part of the digestive act, must be equal to that of the gastric glands, and that the congestion of the duodenal mucous membrane must be equal to, if not greater than, the gastric. Indeed, in my experience, the duodenum is involved more frequently and profoundly than the stomach. This, necessarily, would be the case, as here the final intestinal changes on all articles of food are effected.

The various secretions holding nutritive materials in solution are taken up by the venous radicals, and carried into the portal veins. Their average sum total in a day is something enormous—saliva, 3 pounds; gastric juice, 14 pounds; bile, 2½ pounds; and pancreatic juice, ⅓ of a pound. This quantity, increased by the fluids drunk, is carried forward to the liver. To me, it seems highly probable that the several secretions, thus united, may still act as catalytic bodies and further perfect the work begun in the stomach and duodenum. At least the digestive process is renewed with great vigor in the liver, which becomes the seat of nervous and vascular activity. Thence the portal blood passes to the heart, which propels it to the lungs. Here, the blood, in addition to its parting with carbonic acid and taking up oxygen, undergoes other changes that fit it for assimilation. If the food has been imperfectly elaborated; and, particularly, if the liver has done its part slovenly, the fact is often proclaimed by the vile, putrescent odor of the breath.

When a person habitually overtaxes his digestive organs, the sympathetic nerves lose their irritability, and the portal veins become engorged. Thereupon arise congestion of the kidneys that checks the secretion of urine, and congestion of the liver that prevents the exercise of its several functions.

The portal veins, kidneys and liver being thus oppressed, should the digestion remain active, the evil would be still further increased each day until a serious illness intervened, and, by a forced abstinence, offered the natural powers a chance to recover themselves.

This congestion of the kidneys always induces functional disorder, and sometimes actual disease of the urinary organs. In such cases, a restricted diet and purgative salines are remarkably efficient in reducing the excrementitious products, and depleting the portal veins;

and, in this way, relieving the venal congestion. Even in albuminuria, this plan of treatment proves its superiority to any other by holding the disease in check, and by preventing at times, in recent cases, structural changes.

As to the liver, with its many offices, the engorgement of the portal circulation is even more detrimental. The digestive products passing through it are not properly acted upon, so that general nutrition suffers; and a scanty amount of bile is secreted, so that digestion flags. The same indications that hold in the case of the kidneys are here applicable. Low diet and saline purgatives reduce the work of and remove the blood pressure from the liver the same as they do from the kidneys.

The condition of the urinary and biliary secretions should be carefully observed in all disorders of the digestive apparatus, as, also, in all those that may arise therefrom.

If the urine be scanty, thick, high colored, contains mucus, and deposits a sediment, the digestive organs are, in all probability, clogged and the portal veins engorged. No medication directed to the kidneys can avail as long as the cause remains in operation. Sustáining food, tonics, diuretics, or other remedy suggested by the local disorder, will but add to the trouble already present.

The same statement applies to a congested liver. Nothing can supply the place of bile in the intestines, or remedy the many evils arising from the defective elaboration of the nutritive materials in the portal veins. Artificial digestives are nugatory, and tonics and strong food are injurious.

With this repletion of the portal circulation and oppression of the kidneys and the liver, the irritability of the sympathetic nerves becomes so blunted that the power of spontaneous restoration is well nigh destroyed. Now, a host of diseases are imminent. Which one will first declare itself depends upon the weakness of the part invaded, or upon some trivial exciting cause.

The starting point of this extreme congestive condition is, almost always, the gastro-duodenal mucous membrane, which had previously become inflamed by constant dietetic abuse. A diarrhœa or a purgative may, for a time, resolve the inflammation by exciting the secretion of the mucous glands and the flow of serum from the intestinal capillaries.

The diet, however, not being restricted, indigestion, acidity, flatulence, pain, and the many other symptoms waiting upon dyspepsia soon declare themselves, and offer what natural barrier there may exist to an overindulgence of the appetite. At this point, provided warning is not heeded, the irritation of the ganglionic nerves, and the vitiation of the gastro-duodenal secretions intensify the original disorders, and add others to the list of more ominous import.

On the other hand, if the digestion continues unimpaired and free gratification of the palate be indulged in, the portal circulation will, eventually, be loaded with crude materials, and the liver and kidneys congested. Thereupon will arise irritation of the abdominal nerves, and through this irritation, greater obstruction of the secretive and excretive glands. This irritation, after a time, is propagated to the general nervous system, and then various forms of neuralgia are induced. The natural powers often attempt to burst the bonds that bind them by setting up a diarrhœa or a dysentery. Should spontaneous relief not present itself, nor art act in the right direction, the sympathetic nerves would become torpid and eventually semi-paralyzed. The peristaltic action of the bowels being checked by the imperfect nervous stimulus, all the dangers of obstruction are encountered. Now, as before, the prime indication is to deplete the portal veins, reduce the engorgement of the liver and kidneys, and thus restore the normal irritability of the nerves.

Under one or more of the conditions mentioned above, almost any disease may take its rise; for, if the body be nourished a length of time by poor materials its various structures will not be maintained at the normal standard. Besides, the ganglionic nerves, which preside over the circulation and cell-life of each and every part, will be robbed of this power and rendered incapable of making the most of such materials as shall be presented. A free indulgence at the table leads, in addition to the abdominal disorders hitherto mentioned, to eruptions, erysipelas, rheumatism, gout, and various forms of inflammation. Even pneumonia may be due to this cause. So, likewise, this state of the chlylopoietic viscera may lead to anæmia, scrofulosis and tuberculosis.

Whatever the disease that may start from gastro-duodenal inflammation, congestion of the liver and kidneys and defective secretion and excretion, it is all important to regulate the diet and renew the functional activity of each part before attempting any special treatment.

Of all the organs engaged in the work of digestion, the liver holds the chief place. It elaborates the products of gastro-duodenal digestion, forms glycogen, secretes bile, and excretes colesterin. If the materials for assimilation are not properly elaborated as they pass through the liver, healthy nutrition falters and fails, and if the bile flows scantily into the duodenum the digestion becomes laborious and imperfect. Thus the trouble acts in a circle, one of the several hepatic functions suffering, the others suffers also. If the bile be freely secreted, it will be pretty certain that the liver is performing its other duties equally well. Hence the condition of the liver can always be discovered by an examination of the evacuations, which contain the coloring matter of the bile.

In a healthy, thriving baby, confined to the breast, the evacuations are soft, adhesive, without odor, and of a deep pumpkin-yellow color. If the bile be scanty, the color will be lighter—orange, lemon, or straw color, and the odor sour, musty, or fœtid. A green, dark, or black color is due to a small amount of bile mixed with a large amount of acid and other secretions. When the bile is deficient, the casein appears in minute or small pieces; but when absent, as shown by an ash, grey, or white color, the pieces are large and numerous, floating in an acid, offensive fluid. In such cases, which are seen in cholera infantum and marasmus, there is no jaundice, but only the results of indigestion and malassimilation. Jaundice seems to be wholly due to the absorption of secreted bile before it reaches the intestinal tube, and not to its suppression. In other words, the liver forms the bile from the blood, and consequently if no bile is secreted, no jaundice will follow.

A similar state of the movements is to be observed at any period of life whenever the milk diet is enforced. The green or black discharges do not, as has been taught, indicate biliousness. In fact, the bile is seldom in excess, unless a healthy stomach has, by a casual indiscretion, been subjected to unusual irritation. It is not the cause, but the effect. A simple diet and laxatives is all the treatment required.

In cases of gastric and duodenal inflammation of some standing, miscalled biliousness, diet and laxatives alone are rarely sufficient to reduce the engorgement of the mucous membrane and renew the activity of the liver. An agent is needed that will act directly on the part or parts involved. Such an agent is calomel, which, it would seem, by a local impression on the mucous glands, excites them to secretion. If it fails in this, nothing will be accomplished, the inflammation continuing unabated; but if it succeed, the evacuations will be green or dark and contain mucus. Thereafter the evacuations will have a pale yellow color, showing that the action of the mercurial was upon the mucous glands and not upon the liver. When, however, the mucous inflammation has been subdued by one or more purgative doses of calomel, taken at intervals, and by a rigid adherence to the milk diet for a time, the evacuations will contain a greater, if not sufficient, amount of bile, as the normal action of the liver is due to a healthy state of the duodenal mucous membrane. The completeness and permanence of the cure is now wholly dependent on obedience to dietetic rules.

In obstinate cases, that the mercurial may diffuse itself over a large surface and attain its full topical effect, the calomel must be intimately divided by trituration with chalk or sugar, and given on an empty stomach some hours before it is carried off by a cathartic. Dividing this single dose into several, and administering one at two and three hours' interval, the impression of the calomel is still more decided. Should this course be repeated every second or third day, the mercurial would enter the capillaries and be carried to the liver, and then by direct contact it would stimulate this gland, as it had the mucous glands, to greater functional activity.

The mercurial being used longer still, it enters the general circulation and excites the glands of the mouth and skin.

Whether given in a single purgative dose or in repeated doses, mercury always acts topically on the glands: 1st, on the mucous glands of the stomach and intestines; 2d, on the liver, and 3d, on the glands of the mouth and skin. Being a foreign body, it is thrown off in the secretions, which the stimulus imparted by it has aroused. In the case of the liver, this remedy is revolutionary in respect to the many offices filled by this, the largest gland of the body. The gastro-duodenal gland, or these glands and the liver, having been aroused to and maintained in proper activity by the mercurial, the patient's final restoration to health can come only through a strict adherence to dietetic rules. Here the real difficulties in the treatment commence, as on slight provocation the original morbid action is prone to return. The explanation seems to be this: the ganglionic nerves, when once their tonicity has been impaired, rarely ever regain it completely. Besides, the organization may have been below the average standard through a vice in the ancestral blood. Then, again, in infancy, when the constitution is being formed, the digestive organs may have been so recklessly abused as to intensify hereditary tendencies, and to institute others equally detrimental.

The great duty of the physician to the young is to eradicate the faulty tendencies of the ancestral stock by diet, air, sunlight, exercise, and the many other agencies that tend to build up a vigorous frame. Doing this, he will find in the coming generation that health is the rule and disease the exception, and that functional disorders will be rare, and that even tubercle, albuminuria, diabetes, cancer, will claim fewer victims.

Now and then one meets with a person living on this higher plane through the stamina of his ancestors. The laws of health are seemingly disregarded with impunity. The secret is, such a person is kept up by a reserved power that has been accumulating for several generations in the nerves of animal life. They resist and repel morbific influences. A vitality of a higher order is their happy lot. Others, less liberally endowed, fall into ill-health and perish by the way, while these retain their vigor and march on to the end of the journey. The difference lies in the ganglionic nervous system.

If, as hitherto represented, the condition of the secreting and excreting glands are such important factors in the maintenance of health, and if the first departure in most diseases from this state is due to a faulty digestion and assimilation, it is at once apparent that a mere diagnosis of the special disease excited is not sufficient in a therapeutic point of view. The names, rheumatism, neuralgia, dyspepsia, colic, eczema, etc., etc., mean but little to a physician unless he goes deeper and discovers the underlying causes. These brought to light and removed, the disease, which is only a prominent symptom, disappears spontaneously, or subsides promptly under special medication. This while, the new materials for assimilation should be fully elaborated, and the old materials for dissimilation fully eliminated, and then, through the renewed tonicity of the nerves of animal life, the suffering organ or tissue would return to the normal state. The attainment of health consists in restoring each part to its original functional activity. The sphere of drugs is limited. They are mainly useful in the aid they may give in forwarding this one purpose. Were the druggist's shelves cleared of three-quarters of their contents, patients would not be the losers. What is needed is more attention to dietetic rules and less faith in the virtues of drugs.

If therapeutics should ever take its proper position, and medicine assume the title of science, it would be not by enlarging the pharmacopœia and refining nosology, but by restricting the sphere of drugs, and tracing morbid actions back to their source. This much being done, the cure not only, but the prevention of disease will be the glory of our art. Then the infant would be so cared for as to insure to it a fund of nervous and vascular force that would, under the like care thereafter, insure perfect development in youth, and a hardy constitution in later years. Thus it might come to pass, eventually, that each succeeding generation would start from a higher level physically, and also from a higher level morally, provided the faculties of brain and heart were cultivated with equal assiduity. That would be a happy day for the race, when a sound mind in a sound body was the common heritage.—*St. Louis Clin. Record.*

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Characters of Dead Part.

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The characters of the dead part vary with its structure, its vascularity, the cause of the necrosis, the acuteness of the process, and the possibility of the access of atmospheric air. The more vascular the tissue, the softer its structure, and the more it is exposed to the atmosphere, the more rapidly and completely does it undergo decomposition. Bone, cartilage and tendons, which are firm, hard tissues, containing comparatively but few vessels, undergo very little alteration in structure and form; whereas softer parts are much more rapidly and completely destroyed.

In those cases in which the dead part contains but little water, as when the necrotic process is associated with obstruction of the arteries, and there is no interference with absorption by the veins and lymphatics, or when owing to the destruction of the epidermis, there is great loss of water by evaporation, it may gradually dry up and become converted into a dark shrunken mass which undergoes but little further change. This constitutes *dry gangrene* or *mummification*. It often occurs in necrosis from embolism, in that induced by ergot of rye, and in senile gangrene.

When, on the other hand, the part is moist, as where the necrosis is associated with venous obstruction, so that the return of blood and the absorption of fluids is interfered with, the gradual drying up of the dead tissue rarely takes place. Under these circumstances, if the part be exposed to atmospheric influences, septic bacteria obtain an entrance, and the moisture being favorable to their development, the dead tissue undergoes putrid decomposition, such as occurs naturally in the body after death. In a limb, for example, the liquor sanguinis transudes from the bloodvessels, and evaporation being to a great extent hindered by the epidermis, the transuded and accumulated liquids often form large bullæ on the surface. As decomposition proceeds, gases are generated in the part—principally sulphuretted hydrogen, ammonia, nitrogen and carbonic acid. These give rise to the emphysematous crackling which is so often associated with the gangrenous process. The tissues at the same time undergo a process of softening or liquefaction, the limb becomes exceedingly offensive, and, owing to alterations in the transuded hæmoglobin, changes from a reddish color to a brownish or greenish black. This form of necrosis is known as *moist gangrene*. It occurs only in external parts and in those internal organs to which the air is freely accessible, as the lungs. When met with in other situations it is due to infection with septic matter.

In many cases the necrotic process is associated with fatty degeneration. The dead tissue then presents somewhat different characters, often becoming *caseous* or *liquefying*.

The changes in certain tissues must now be considered more particularly. Firstly, with regard to the blood: This fluid undergoes the earliest and most rapid change. The hæmoglobin escapes from the red corpuscles, partly by exudation, and partly by the destruction of the corpuscles themselves, and dissolved in the liquor sanguinis permeates the surrounding tissues. The corpuscles are ultimately completely annihilated, nothing remaining but a few minute granules. The staining of the tissues with hæmoglobin is commonly known as *post mortem staining*, and the appearance it presents is very characteristic. The lining membrane of the heart and blood vessels, being in immediate contact with the blood after death, are the parts principally affected. The staining is of an uniform pinkish-red color, thus differing from the punctiform and stratiform redness of hyperæmia, from which it must be carefully distinguished. The amount of staining is in proportion to the rapidity with which decomposition has taken place, and to the amount of blood contained in the part at the time of death.

In muscle the arrest of nutrition is accompanied by a state of rigidity, known as the *rigor mortis.* This is a peculiar condition of the muscles observed in almost all bodies after death, in which they become firm and somewhat shortened, as though in a state of chronic contraction. It comes on as soon as the muscles have lost their irritability—*i. e.*, their capability of responding to artificial stimulation ; in other words, as soon as the nutritive processes have completely ceased. The time of its appearance will therefore depend upon the state of nutrition of the muscles at the time of death ; the more healthy and vigorous this is, the longer it is before the nutritive processes completely cease, and consequently the longer it is before the rigor mortis supervenes. The length of its duration and intensity are in direct proportion to the lateness of its appearance. In people, for example, who are in perfect health, and die suddenly, as from accident, the rigor mortis does not usually come on until from ten to twenty-four hours after death ; it is very marked, and often lasts two or three days. In those, on the other hand, who die from some exhausting disease, as from chronic phthisis or the adynamic fevers, in which the nutrition of the muscles becomes very much impaired, the rigor mortis appears very soon, sometimes as early as ten minutes after death; it is very slight, and may pass off in less than an hour. It has been said that in cases of death from poisoning by carbonic acid and sulphuretted hydrogen, from lightning, and from some of the severer forms of the adynamic fevers, the rigor mortis is entirely absent. It is doubtful, however, if this is the case, as the rigor mortis has probably escaped observation, owing to its early supervention and rapid disappearance. As soon as the rigor mortis has passed off, decomposition of the muscular tissue commences.

With regard to the nature of the change—it was formerly supposed to be a spontaneous contraction, the last act of vitality on the part of the muscle. More recently, however, Kuhne and others have shown that it is really owing to the coagulation of the albuminous substance of the muscle—myosin. The myosin, fluid during life, coagulates when nutrition has ceased, the coagulation being attended by the liberation of a free acid. Thus is produced the firmness, hardness and opacity of the muscle, which disappear as soon as disintegration and decomposition commence. The transverse striation of the fibers then become indistinct, and gives place to irregular rows of granules and fat molecules, the muscle softens, its scarcolemma is destroyed, and ultimately nothing remains but a soft, structureless debris. This change occurs not only in muscle, but in the cells of other tissues a similar coagulation of the protoplasm takes place on the cessation of the nutritive processes.

Respecting the changes in other tissues—protoplasm generally not only coagulates but tends to become finely granular after death. It sometimes increases in size so that the cells look swollen; and in nucleated cells the nucleus often shrinks or entirely disappears. The cells ultimately break up into molecules of various sizes. In adipose tissue, the cells diminish in size, owing to the escape of the fluid fat which diffuses itself throughout the surrounding structures. The fibers of connective tissue swell up, become opaque, and ultimately liquefy. In nerve fibers, the white substance of Schwann coagulates and collects into small drops (myelin) with a neurilemma.

Cartilage and bone resist the necrotizing process longer than any of the tissues and are the least altered by it.

Terminations.—The termination of the necrotic process varies. It may, after involving a greater or less extent of tissue, become arrested, and a "line of demarcation" form between the dead and living parts—*Circumscribed Gangrene*; or the process may continue to extend without any such attempt at recovery—*Diffuse Gangrene.* Whether the one or the other occurs will depend, in great measure, upon the presence or absence of any pre-existing local weakness either in the circulation or the tissues. Necrotic processes in a healthy individual tend to become circumscribed, but when the circulation is enfeebled, or the vitality of the tissues impaired, as in the aged, they are liable to be diffuse. (See "Senile Gangrene.") The presence of septic bacteria also tends to interfere with the arrest of a necrotic process.

When the process becomes arrested, the dead tissue—the sphacelus or slough—acts as a foreign body, and as such sets up inflammatory changes in the adjacent living structures, and by this means it is ultimately removed or becomes encapsuled. The tissues immediately surrounding the necrosed part are thus in a state of inflammation, as is evidenced in external structures by their swelled condition, red color and high temperature. As the necrotic process ceases, the dead fragment becomes limited by this line of inflamed tissue, which constitutes the "*line of demarcation*" between the dead and living parts. Along this line a process of suppuration takes place, and by means of this the dead mass is gradually separated from the surrounding structures. The ultimate termination of the process depends principally upon the situation of the affected part—if this be superficial, the slough is thrown off, as in external parts, the intestines, the pharynx, etc., an ulcerated surface being left. If the dead mass is deeply seated, its removal becomes possible only by the extension of the necrotizing process to the surface, as is exemplified by the spontaneous removal of necrosed bone through fistulous openings in the soft parts.

In other cases the inflammatory process which takes place in the tissues surrounding the dead part is less intense, and the formation of pus is less abundant, and is soon followed by that of vascularized connective tissue, a layer of which is ultimately formed around the necrosed mass, by which it becomes *encapsuled.* This occurs especially in internal parts. Examples of it are furnished by foreign bodies, hemorrhagic infarcts, accumulated epithelial products, portions of necrosed bone, and a fœtus in the abdominal cavity, all of which may thus become surrounded by a layer of connective tissue. The part, when thus encapsuled, is usually rendered inert and no longer acts as an irritant to the tissues in which it lies; it undergoes a gradual process of absorption and drying up, and often becomes calcified.—*Pathological Anatomy.*

Puerperal Eclampsia.

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Some time ago I sent you a report of three cases of puerperal eclampsia treated by the subcutaneous injection of morphine. I then expressed my firm belief in the efficacy of the treatment adopted. I have since had two cases similarly treated, with like good results.

The treatment of eclampsia is as interesting a topic as any in the whole circle of our art, as it is a common and fatal disease. The various systems of treatment adopted from time to time have been anything but satisfactory, although nearly every drug in the whole range of the Pharmacopœia has been tried. It is unnecessary for me to enumerate the different remedies used and the results obtained, as they are perfectly familiar to the reading student and the active practitioner—suffice it to say that each has had its advocates, although the results obtained have been far from satisfactory.

The lancet is still held by some practitioners as the sovereign remedy in this disease. But as to its uniform or general benefit I am very doubtful—there is nothing in the nature of the case, or in the apparent condition of the patient, to justify its use. Not a few practitioners conjoin active purging with venesection, or trust to it alone. Some have great confidence in chloroform and ether, others in emetics, others in chloral hydrate and the bromides, while I believe from reading the *Canadian*

Journal of Medical Science, there is one individual whose faith is strong in the efficacy of ten grain doses of quinine every two hours, although he has failed to inform the reader how it was administered.

There has of late years been an endeavor on the part of the leading minds in our profession, to treat the disease on a pathological basis. This is to be highly commended, and I hope the investigation will be pursued till a fixed pathological basis is found upon which we can confidently rest our treatment.

After all that has been written on the subject, I do not think there is a tittle of evidence to prove that disease of the kidneys has anything to do with the production of eclampsia, save as a casual companion or possibly a favoring condition. It is quite as likely that the condition of system giving rise to eclampsia may be the exciting or predisposing cause of the disease of the kidneys. Cases must have come under the observation of every practitioner doing a large midwifery practice, of patients having almost complete anuria without any sign of convulsions. And it is a matter of everyday occurrence to meet with cases where the urine is loaded with albumen, and the limbs and body dropsical, without any appearance of eclampsia. Now, if the diseased condition of the kidneys is the cause of convulsions, as claimed by some pathologists, why should so many escape who are suffering from it? It would be supposed that the same cause would produce the same effect in all cases. It is a well-known fact that ague is always produced by the same malarial poison, and that the person whose system becomes saturated with it will necessarily get the disease. The same remarks will apply to typhoid fever, tubercle, syphilis, and, in fact, to every disease affecting the human system; each has its specific cause, and none can be produced by any other but the specific poison.

It must be admitted, however, that in many cases we are unable, by any means at our command, to discover the pathological condition upon which it depends. But this is no argument against its existence. For the particular disease under consideration the pregnant condition is necessary to its production, and consequently it will be well for us to consider, in a practical way, some of the leading features in connection with this condition. In the first place the system will be burdened with the extra work of supplying and developing the fœtus. The heart will necessarily have more work to perform in carrying on the fœtal as well as the general circulation. The nervous system will also have extra duties in contributing to the development going on.

Now, in order to have a healthy body it is necessary to have the circulatory and nervous systems in a healthy state. If either, or both, are disturbed from any cause, the effect is soon felt on the general system. It is only necessary to notice the effect of fear on the human system to illustrate this fact. Look at the expression of countenance, the nervous tremor, the disturbed digestion, and sometimes the involuntary evacuation of urine. If fear has such a marked effect upon the system, is it not reasonable to suppose that the over-taxing of the nervous and circulatory systems will produce not only eclampsia, but disease of the kidneys? It is evident that the fœtus in utero acts as a quasi foreign body, inasmuch as it serves as a source of irritation from the very commencement of gestation. The patient almost immediately after conception is disturbed by nausea and vomiting, which sometimes defy our best efforts to suppress. The labor required of the circulatory and nervous systems increases as gestation advances. Consequently, at or near the termination, the nervous centers are worked up to such a state of tension, if I may so express myself, as to relieve themselves by that spasmodic condition called convulsions. This, I believe, is substantially all we know, or at least, by far the most we know about the etiology of eclampsia. It is an explanation, I grant, somewhat vague and general: but in the absence of any other more exact, or to the point, I am inclined to accept it.

Before entering on an explanation of the treatment, allow me to give a brief report of the two cases before mentioned:

Case I.—Mrs. G——, aged twenty-six, Primipara, was taken in labor about 1 A. M. on the 4th of February. I was sent for about 9 A. M., and found the head presenting, and the labor well advanced in the second stage. The child was born about one hour after my arrival. I removed the placenta, made my patient as comfortable as possible, and remained in the house for half an hour or more. On leaving, she expressed herself as feeling very well. In about one hour afterward I was sent for in great haste, and on my arrival found my patient working in a convulsion. The nurse informed me that she had three fits before I got there. I at once administered one-quarter of a grain of morphine subcutaneously, which controlled the convulsions, the patient falling into a quiet sleep which lasted for several hours. In the evening of the same day the nurse was removing some of the soiled clothing, when the patient attempted to sit up, and was seized with a slight convulsion, which was almost immediately controlled by a second injection of $\frac{1}{4}$ grain of morphine. After this she went on to convalescence without any further symptoms of eclampsia.

Case II.—Mrs. T——, aged about thirty, pregnant with her third child, was seized with convulsions at the commencement of labor. Drs. Winstanley and Richardson chloroformed the patient, dilated the os, and delivered with forceps. The fits continued at regular intervals from some time in the night till the following afternoon, notwithstanding the use of chloroform and chloral hydrate. I saw her about 3 P. M., when a quarter of a grain of morphine was administered, after which the convulsions ceased for three hours. She then had a slight convulsion, when I again administered a second injection of $\frac{1}{4}$ of a grain of morphine, which completely controlled the eclampsia—the patient going on to convalescence without any further trouble.

I will now briefly give my reasons for the use of morphine in the treatment of this disease.

I before intimated that the increased labor required of the heart in carrying on the fœtal circulation might disturb the general circulation, and as a consequence anæmia of the brain be produced. In the second place the brain and the nerves of organic vitality become irritated and exhausted by the duties required of them.

The question might here be asked, if this theory is correct, Why do not all pregnant women suffer from eclampsia? The only answer I can give to this query is that some women bear their pregnancy more lightly than others, and that there is not so much disturbance of the nervous and circulatory systems.

However, if this theory is correct, as I am inclined to think, we have two indications for the use of morphine. In the first place, by giving this drug we produce an increased flow of blood to the nerve centers; and in the second place, by its soporific effect the brain is allowed to rest while increased power is gained to carry on the nervous functions of the body. The control which morphine exercises over the disease, both in the preliminary stage, as well as when the convulsions actually set in, is so prompt and decisive as to convince the most skeptical after having given it a fair trial. No doubt in some cases, from the violence of the attack or the injury done to the brain by the first onslaught of the convulsions, the medicine will fail; but I am fully convinced that if properly administered and in time, we have in our hands a sure and certain remedy for this disease.

I believe that many of the failures reported after its use can be accounted for by the mode in which it is administered. To give any preparation of opium in this disease by the stomach is of little, if any, use, as the sickly condition of the organ is such that the medicine is not absorbed in time to be of any benefit to the patient. And no man should venture an opinion as to the virtues of the drug unless he has given it subcutaneously. I am satisfied that in the two cases before mentioned the dose was not sufficiently large. If half a grain or a grain had been used at the first injection, the probabilities are that a second fit would not have occurred. I would, therefore, advise at least half a grain at the first dose.

There need be no fear in administering large doses of morphine in this disease, as the system appears to tolerate large quantities of it. I am satisfied that you can give doses with safety in eclampsia, that would prove fatal in any other form of disease.

However, every indication can be met, by giving from one-half to one grain at an injection. And I venture to say if this quantity is given, there will not likely be any necessity for a repetition.

The point to note in giving the drug is to give it early, and in sufficiently large doses to control the convulsions.

The necessity of hastening the labor should not be neglected or overlooked, as I consider the sooner the delivery takes place, the better is the chance for the recovery of the patient, as you remove the main source of irritation.

In conclusion, allow me to urge on those of my readers who have not yet tried the drug, to avail themselves of the first opportunity to put it in practice. And I feel confident that after giving it a fair trial they will agree with me that it is the sovereign remedy in this disease.

Surgical Treatment of Empyema.

The subject was introduced by Dr. C. Gerhardt (Wurzburg), who first reviewed the opinions of the earlier writers on the subject. Passing to the practical side of the question, he expressed the belief that a small empyema might be cured spontaneously by absorption; another favorable termination was by expectoration, after a spontaneous opening into the lung; after two or three weeks of purulent expectoration, such cases got well. As to operative interference, he found that a single aspiration sometimes resulted in a complete cure; a method which had been found useful consisted in replacing the pus withdrawn by some indifferent or antiseptic fluid, without the admission of air to the chest. He advocated the free opening of the chest under antiseptic precautions; and thought that to wash out the pleura was not free from danger. Very early childhood gave less favorable, the middle period of childhood more favorable, results than adult age.

Dr. Ranke (Munich) thought that in children an empyema comparatively seldom opened into the bronchi; this, he thought, was the most favorable termination. He made use of incision, with antiseptic precautions, and under this system found that his patients generally remained about six months in hospital.

Dr. Jacobi (New York) had seen three cases of empyema in infants, one containing as much as twelve or thirteen ounces, in which recovery had occurred after a single aspiration.

Mr. F. Richardson Cross (Bristol) thought the early removal of pleuritic effusion was necessary to insure the re-expansion of the lung. He advised an incision in the eighth or ninth intercostal space, with antiseptic precautions, if aspiration failed after two trials. He had recently had three very successful cases treated on this method. One of them was a most unfavorable case, in a girl aged eight, but recovery ensued in seven weeks.

Mr. R. W. Parker (London) said, that as the question of treatment must very much depend on the mechanical condition of the chest, it would be well to divide empyemata into two chief classes, viz.: 1. As found in children; 2. As found in adults. Whatever method of treatment was adopted, no favorable result could be expected unless the conditions regulating chest-movement assisted. The cavity of the empyema could not be emptied unless the lung could re-expand, or the chest-wall fall in. In children these conditions were present more commonly than in adults; hence the disease in them was less serious. In old people, whose chest-walls were very rigid, empyema was always a serious, often an incurable, disease. He believed that aspiration, two or three times repeated if need be, was the best treatment in childhood, and it ought always to be adopted before other measures were tried. No doubt the next best mode of cure was the expectoration of pus through the lung; but it was hardly safe to postpone treatment until this took place spontaneously, and, unfortunately, there were no mechanical means by which it might be brought on. When aspirations had failed, a free incision into the lowest and most dependent part of the chest, with antiseptic precautions, was called for. In adults he also advocated aspiration; but if the cavity were large he also suggested that filtered and carbolized air should be injected into the pleura; this air helped to replace the fluid, lessened the dragging sensation often felt, and prevented reaccumulation.—*British Medical Journal.*

New York Academy of Medicine.

Stated Meeting, November 17, 1881.

"THE CELL DOCTRINE AND THE BIOPLASSON DOCTRINE."

INTRODUCTORY to the paper the author gave a *resume* of his observations on hyaline cartilage, given in full at the last meeting of the American Laryngological Association, and published in the *Archives of Laryngology.* It was to the effect that hyaline cartilage had been considered one of the simplest of tissues, being made up of a dense basis-substance, in which were imbedded soft corpuscles or granular cells. The chief theories in explanation of the manner in which these corpuscles obtained nutrition had been imbibition and the existence of delicate channels, in the basis-substance, through which nutrient fluid could pass and reach the granular bodies.

Dr. Heitzman, of New York, however, had discovered that the hyaline cartilage was really made up of blocks of living matter united by threads of living matter, that is, that hyaline cartilage is a network of living matter, into which lumps of living matter had been placed. The same line of investigation had been extended to the various tissues, and the conclusion reached that the whole body consisted of lumps and threads of living matter united in this manner.

Dr. Elsberg explained the cell theory as represented by Schwann, Virchow, and others, and showed that the word "cell," to designate the organic form element, had long been a misnomer, and claimed that since Dr. Heitzman's discoveries it was not only erroneous, but misleading. Hitherto the amæba had been supposed to consist of a homogeneous, structureless lump of jelly like living matter called protoplasm, containing granules, supposed to be foreign particles; but really it was a mass of living matter arranged into a network, the points at which the threads intersect each other being thickened and constituting the granules supposed to be foreign bodies, and in the meshes of this network was contained the "non-contractile" matter.

He regarded the word "protoplasm" as etymologically incorrect, and preferred the word "bioplasson."

The essential difference between the cell doctrine and the bioplasson doctrine was that, according to the former, each tissue was made up of a number of unities; according to the latter it was composed of masses of living matter interconnected by threads of the same living substance. [See MEDICAL RECORD, vol. x., p. 364.]

Dr. C. Heitzman said that he made his discovery in 1873, the more theoretical and scientific part of which had been laid before the academy by Dr. Elsberg. There were, however, practical questions closely connected with the doctrine, which, he thought, would form some part of future medicine, as it would enable us to determine the constitutional viability of each individual. What Dr. Elsberg had described as a reticulum of living matter varied greatly in different individuals, and by the aid of the microscope it could be positively determined how much of living matter there was present in each single element of protoplasm formerly called a cell. The white blood-corpuscle was a constituent part of the body, and in it could be found all the features necessary to indicate the amount of living matter in the entire body; in other words, the actual constitution of the individual. [See MEDICAL RECORD, vol. xi., pp. 321 and 322; vol. xii., p. 94; vol. xvi., p. 68.]

"PYÆMIC PAROTITIS."

Dr. C. A. Leale read a paper on the above subject,in which he spoke of suppuration of the parenchyma of the parotid gland, in contradistinction to the idiopathic affection commonly called mumps. He believed that the primary step in the pyæmic parotitis was ulceration, or solution of continuity at some distant part of the body. He had observed metastatic abscesses in the parotid gland only where ulceration had existed in some part of the body previously. Hence, cases had occurred in connection with typhoid fever, dysentery, suppurative osteomyelitis, diphtheritic ulcer of the posterior fauces, pelvic cellulitis with ulceration, peritonitis, etc., and were embolic in origin.

Dr. Leale then reported several cases and presented two patients who had had suppurative parotitis, which he believed to be due to the cause mentioned.

The *first* was a case in which the abcess broke through and pus discharged from the external auditory canal; it followed acute general peritonitis, and pelvic cellulitis with formation of abscess. Pus could be seen exuding into the external auditory canal, near the membrana tympani. The pelvic abcess opened spontaneously into the vagina. There was also post-pharyngeal abcess, which was opened. The discharge from the ear continued for more than a year. At one time there was complete blindness, complete deafness on the affected side, and nearly total loss of hearing upon the opposite side. The patient ultimately recovered, with hearing and vision completely restored.

The *second* was a case in which, with suppurative parotitis, there was discharge of pus from the external auditory canal on both sides, and there was also complete deafness for three weeks. Hearing in both ears was completely restored.

The *third* was a case in which suppurative parotitis followed typhoid fever, with hemorrhage from the bowels. The abcess communicated with Steno's duct, discharged behind the ear, and nearly, or quite all the gland sloughed away. In this case, as an interesting item in its clinical history, goitre developed, which ultimately disappeared under the use of iodine. The patient was presented to the academy.

Dr. Leale then referred to a number of cases which had fallen under his own observation, others, which had been reported by different writers, and in which profuse suppuration had existed, without the occurrence of parotid abcess. From the observation of his own cases, he had been led to believe that suppuration of the parotid gland was best explained by the theory of sepsis; micrococci poison was conveyed from a distant point to the parotid gland, and there developed an abcess or abcesses. He had not seen such metastatic abcesses occur, even with profuse suppuration, provided the pyogenic membrane remained unbroken; neither had it occurred under his observation with the abundant suppuration of empyema. Nor did hospital gangrene seem to be a cause of these abscesses.

Dr. Leale then referred to cases of osteomyelitis which he had reported in the "Surgical History of the War." He also referred in passing to the difficulty of removing the parotid gland, and mentioned cases in which the operation had been done partially or completely by Drs. A. C. Post and William T. White.

The President referred to cases of suppurative parotitis which he had seen in puerperal women. In 1874 he saw a young married woman who had a miscarriage; subsequently pelvic cellulitis; afterward distinct symptoms of pyæmia, followed by abcess of the parotid gland and death by exhaustion. In Bellevue Hospital he had seen two cases in which the patients died from exhaustion produced by suppurative parotitis of pyæmic origin.

Last winter he saw a patient who had a miscarriage; two weeks subsequently pelvic cellulitis, in which abcess occurred, and two ounces and a half of pus were removed with the aspirator. One week afterward abcess of the parotid developed, which was opened; subsequently the parotid gland upon the other side suppurated. Two weeks after that, ulcerative endocarditis and pericarditis developed, and the patient died two days after the development of the cardiac complications.

Two years ago he saw a case with Dr. Markoe, in which the patient had pyæmia, following the running of a toothpick under a finger-nail. Suppurative parotitis occurred; the pus was deep-seated; the abcess was opened, it discharged freely, and the following morning the patient died of œdema glottidis.

These cases illustrated the fact that the occurrence of suppurative parotitis with pyæmia was not so very rare.

Dr. A. C. Post and Dr. William T. White stated that in their cases it was not known positively that all of the parotid gland was removed.

Dr. Joel Foster referred to a case in which the parotid gland was completely removed by Dr. McClellan, of Philadelphia.

Dr. H. D. Noyes had been interested in listening to the report of Dr. Leale's cases, in which the discharge found its way into the external auditory canal, and also where both vision and hearing were implicated. He thought the discharge into the external auditory canal could find its explanation in the fact that the cartilages of that canal were embryonically developed in parts, and probably a fissure or imperfect fusion remained. Probably these portions of cartilage were less developed in some persons than in others, and at the different points where there was the least resistance the pus might find its way through and make its exit in the direction of the external auditory canal.

Dr. Noyes thought it very remarkable in Dr. Leale's case in which there was deafness in both ears and total blindness, that there should not have been any serious brain-symptoms. The case was probably one of very circumscribed inflammatory action at the base of the skull, which must have affected the sheaths of the optic nerves, and doubtless gave rise to choked optic disc. Ophthalmoscopic examination would have been exceedingly interesting, and probably would have revealed that condition of the respective papillæ. The entire recovery of vision favored the hypothesis that there was nothing more than œdematous effusion. Dr. Noyes then referred to a case in which inflammatory action affecting the semicircular canals followed idiopathic parotitis. The patient recovered, with total and permanent loss of hearing upon one side, and there had been no symptoms of acute inflammation of that ear. There was the characteristic staggering gait, which was never fully recovered from. The precise way in which such results were produced he was unable to say, but the complication was sufficiently common to make the case worthy of special mention.

The Academy then adjourned.

Intra-Capsular Fractures.

Dr. Maxwell (Illinois State Med. Society) gives the following on the above subject, together with the history of two cases in which his method of treatment was successful:

The treatment of intra-capsular fractures has enjoyed the attention of the best minds in this country. In this paper I intend to summarize the teachings of modern surgery, and suggest some additions to the treatment. Intra-capsular fractures are those involving the neck of the femur, entirely inside of the capsule of the joint. They are peculiar to advanced age and to females. They are remarkable on account of the small amount of force necessary to produce them, and for the extreme difficulty in obtaining union by bone. As age advances, remarkable changes take place in the shape and size of the neck of the femur. It joins the shaft more nearly at a right angle, diminishes in size and becomes more fragile. The possibility of bony union in these fractures has been discussed with no little warmth. Astley Cooper's and Frank Hamilton's researches show that, though possible in some instances, it is so rare as not to invalidate the truth of the assertion that there generally is non-union. Union does not take place for the reasons:

1. There is a deficient vascularity in the bones, due to their relative positions and deficiency of the artery passing through the ligamentum teres.
2. Whatever reparative material is developed has no local permanence, there being no support or nidus for it.
3. This material becomes so diluted with increased secretion of synovial fluid, as to be incapable of making any progress.

4. Imperfect coaptation and the impossibility of keeping the parts quiet.

These causes, combined with the action of the powerful muscles at the site of fracture, constitute the chief reasons for non-union.

The treatment has been the subject of difference of opinion. Erichsen advocates a similar plan to Agnew's. The failure on the part of surgery to have means to coaptate the ends of the fractured bones is enough to account for the failure of many fractures to unite. If surgery proposed no better methods of treating fractures of long bones than those for intra-capsular fractures, there would be, no doubt, as much non-union in these, and it would be said that the bones are degenerated, etc. Is there not too great a tendency to saying such things instead of trying to put the bones in good coaptation? Extension must always be used in the direction opposite to the displacing force.

All the forces act on the lower fragment, and the tendencies to displacement are upward and inward. The muscles are strong and numerous and tend to draw the femur upward, shortening the limb and turning the thigh outward, and throw the trochanter behind the acetabulum. There is eversion of the foot, and crepitation can be distinguished when extension is made. The teachings of modern surgery, that extensions be used, is not sufficient.

The following plan, which I offer, is rational, and has been successful in two cases in my practice:

Apply extension in two directions in opposition to two forces, longitudinally and laterally. Put adhesive strips along the leg and foot, to hold a cord passing over pulley and attached to weight. Lateral extension is made by a five inch muslin band around the body. A splint is applied to the inner aspect of the thigh. A pulley is placed opposite the crest of the ilium and four inches above it. Counter extension is made by the body; the bed is elevated at the foot, one foot on the fractured side and eight inches on the other. The head post on the injured side is elevated four and a quarter inches. By this method the fragments are brought as nearly correctly in apposition as is possible. The inner surface of the capsular ligament is rendered tense and applies itself to the sides of the neck and holds it.

MICROSCOPY.

Koch's Demonstrations in the Germ Theory.

AMONG the many interesting facts brought forward and the discussions held during the Congress, none surpassed, if indeed any equaled, the work done by Dr. Robert Koch, of Berlin. He first showed some of the new methods of cultivation, which surpass in beauty and simplicity, as well as in usefulness, anything that has yet been done in this way. He began to study the growth of pigment bacteria and boiled potatoes, and soon discovered that, as the organisms were there growing on a firm substratum, they did not become mixed up with each other or with accidental contaminations, and he could always find a spot where the bacterium was pure. He could then inoculate another potato from this spot, and obtained the organism pure. Any organism introduced accidentally grew only where it fell, and thus a pure cultivation from a pure part was always possible; on the other hand, if these organisms had been growing in a fluid, the introduction of another form would have rendered them impure forever. Dr. Koch exhibited specimens of *micrococcus prodigiosus* which produces a red pigment, and also of the bacillus which causes blue pus, and that which causes blue milk. Other forms of bacilli were shown which microscopically were indistinguishable, but which could be at once separated from each other by differences in their mode of growth on solid substance. The advantage of a solid, rather than a liquid, cultivating material being thus apparent, Dr. Koch next turned his attention to the solidification of other cultivating materials, such as would nourish pathogenic bacteria, and he found that by the addition of gelatine to the fluid, used in the proportion of three or four per cent., a solid cultivating material was obtained, whose power of nourishing organisms was not in any way interfered with by the presence of the gelatine.

Some of this material, being rendered fluid by heating and spread out on a slide, was allowed to solidify, then bacteria could be sown on it, and their mode of growth watched with a low power of the microscope. Thus, a minute quantity of dry earth was scattered over such a slide, and, in a few hours' development, could be seen to be accruing around almost every particle. In this particular specimen seven different sorts of bacilli were present; many of these could not have been distinguished from each other, by the microscope, but a difference was at once observed between their mode of growth on the solid substance—some forming round balls, others growing out in a star-shaped manner, others growing in a fine net-work, etc.

In the same way, the number and nature of the organisms present, in any given quantity of air, could be estimated. A broad, shallow vessel was filled with the gelatine mixture and exposed for a given time to the air. At every point where an organism fell on it, growth occurred, and thus the number and nature of the organisms present could be at once ascertained. But, further, as each organism was a pure cultivation, pure flasks could be inoculated from each variety, and thus its further life-history and pathogenic characters could be investigated.

Similarly with water. The material in a test-tube having been rendered fluid, a given quantity of water was shaken up with it until solidification occurred. At every point where an organism was present in the water, development occurred, and thus the number and nature of the organisms present in a given specimen could be at once ascertained.

Dr. Koch also exhibited some of his pathogenic bacteria. Animals which had been killed with anthrax were shown. The fatal nature of the poison was demonstrated; the constant presence of the *bacillus anthracis*, its mode of growth in the gelatine substance, and its virulent properties after having been grown in it, were all made apparent. The bacillus of mouse septicemia, which is described in his work, was shown in a similar manner. For several months this organism was cultivated in gelatine blood serum, forming a fine, cloudy mass and retaining its form and other characteristics. A minute drop of this was placed under the skin of a mouse. This animal died in forty-eight hours; and in its blood were numerous bacilli. Another mouse inoculated from this blood also died. In gelatine inoculated with this blood these organisms developed; and after further cultivations with this, the minutest drop killed another mouse. Septicemia was shown in pigeons, rabbits, mice, etc., due to a minute bacillus of peculiar form, resembling in appearance the organism of the "*cholera des poules*" of Pasteur. The same sort of proof was given with regard to this organism as in the former case. And, lastly, a beautiful form of erysipelas was shown in the ear of rabbits, caused by the inoculation of the rod-shaped bacillus of the septicemia of mice; this sometimes, though not always, killed the animals.

The importance of these experiments can scarcely be estimated at present, but there is no doubt that they show a great advance, and no work has more tended to throw light upon the complicated subject of pathogenic bacteria than that of Dr. Koch. Dr. K. lays great stress on the value of microphotography as essential to an accurate record of facts; and photographs which he exhibited on Friday, were certainly very fine examples of what can be done in this way.—*Medical Times and Gazette.*

The Phenomena of Growth Among the Microscopic Forms of Life.

(CONTINUED FROM LAST NUMBER.)

SOMETIMES on an old decaying log by a brook, along the road, or half buried in forest soil where it is always moist, there will be found masses of a soft, jelly-like substance. This, when examined with a microscope, may be seen to move. It is a mass of living jelly. Is it an animal or a plant? This question has puzzled the microscopists for years, and even now they are not all agreed as to the affinities of the myxomycetes, as they are called. Saville Kent, one of England's most eminent authors, believes in their animal nature, but they are usually claimed by the botanists, and it is not unlikely that they will yet be identified as a stage in the life-history of certain fungi. But the mere fact that there is still ground for a difference of opinion regarding their animal or vegetal nature proves that the two kingdoms run very close together. A manifestation of plant-life that has been the source of much confusion is the motile stage, which comes into the life-history of many of the algæ, serving as a means of propagation. The contents of certain cells become changed into one or more swarm-spores, as they are called, which consist of minute, green, spherical or oval, protoplasmic masses provided with one or more hair-like appendages, which, lashing constantly in the water, cause the organisms to swim about. One morning I sat down to examine, with the microscope, some algæ from a collection of the previous day. Among them I found some long, cylindrical filaments composed of a series of short cells, about as long as broad, joined end to end, and filled with bright-green contents. In some of these filaments the green contents of each cell had collected into a ball, which was moving restlessly. In a few moments the membrane that confined them ruptured on the side, and allowed the moving masses to escape. One by one, in rapid succession, the little balls, only about $\frac{1}{5000}$ in diameter, were set free, and they moved away rapidly. They were the swarm-spores of the plant *Ulothrix*, and upon close inspection each one was seen to be provided with two very slender filaments springing from one end of the slightly elongated mass, two or three times longer than the body, and so fine that they only became visible when greatly magnified and carefully illuminated. By the constant lashing of these delicate appendages the swarm-spores moved about in the water.

This process of propagation is quite common among the cryptogamic plants. After the swarm-spores are set free, they swim about for a short time, then become attached to something and begin to vegetate, forming a new plant like the parent. I remember watching, for the greater part of a night, the formation of swarm-spores in the cells of the beautiful *Spirogyra*, an algæ which is very common in the early spring in roadside ditches and ponds. A large number formed in each cell of the *Spirogyra*, and for a considerable time moved about in their confinement very actively. At last an opening formed in the cell-wall, through which the active spores slowly made their way, just as an India-rubber ball might be forced through an opening smaller than its diameter. Once free they were soon lost sight of.

These swarm-spores are simply masses of protoplasm, colored green by chlorophyll, the coloring matter of the vegetable kingdom, which have a scarcely perceptible enveloping membrane, with the two or more hair-like lashing filaments. They do not assimilate food, but pass an ephemeral existence swimming through the water, finally becoming attached to something, when they begin to grow into new plants. They serve to propagate the species of the plants from which they spring. Yet, although so utterly devoid of organization, they are sensitive to the influence of light, and in the mother-cell they seem to mature at certain hours of the day, which vary with different species. Place the algæ in a shallow dish, and the spores will be set free in a greenish cloud, which slowly makes its way toward the window, and finally forms a green border around the dish on the side nearest the light.

In these processes we have seen no indication of any distinction between the different cells, such as would lead to the inference that one is a male-cell and the other a female. But the homology of nature seems to require that there should be such a distinction some time in the life-history of even the simplest plants; for only by the union of opposite elements can the vegetative life be maintained. We can hardly suppose that a single cell could give rise to an unlimited progeny by division continued indefinitely. The vitality of the later generations would finally be exhausted, and the species could then only be maintained by some kind of sexual union which renews and vivifies. But while we say this, it should be understood that the characteristics of the male and female elements of plants and animals are not known. Conjugation signifies the union of these two elements, but in the lowest stages of life no difference can be distinguished between them. It is even doubtful if they possess any distinguishing characters, for when any two particles of protoplasm come together and coalesce, we call it true conjugation; and the living contents of a single cell may separate into two parts, one part passing to one end and the rest to the other end of the cell, after which the two portions may again unite and form a spore.

Passing a step higher in the scale, we find many plants that conjugate by the union of the cells of two filaments and the intermingling of their protoplasm results in the formation of a spore, from which new plants develop. This is the case with all the family Zygnemaceæ, the fruit of which is called a zygospore. As an example of this interesting process, we may choose a species of *Spirogyra*, a filamentous alga common in our roadside ditches, which has received its name from the spiral arrangement of the coloring matter within the cells. When the time of conjugation arrives, the cell-contents lose their regular arrangement, and finally two filaments, lying side by side, will send out short extensions, which gradually approach each other, unite by their ends, after which, by the dissolution of the terminal partition, there will soon be formed tubular passages from the cells of one filament to those of the other, and the two plants will be united as by the rounds of a ladder. Then all the protoplasm of the cells of one filament flows into the cells of the other, and there forms a spherical mass, enclosed within a rather thick wall, called the zygospore. The original cell-walls then decay, the spores ripen, and from each of them a new plant like the parent form will spring. Watching them under the microscope from day to day, spiral bands will be seen forming in the interior green mass. In due time the outer covering breaks, and the young plants appear as oval cells with bright-green spiral bands of chlorophyll which slowly elongate, divide and produce new filaments.

We have no time this evening to indicate the important role which the most minute living creatures play in the world; but, owing to the interest now taken in sanitary questions, it seems advisable to briefly refer to those minute plants known as bacteria, which are supposed to be the active agents in the production and spread of contagious diseases.

It has been found that in the blood of men and animals suffering from certain disorders, of a more or less fatal and contagious character, there are numerous rod-like or spherical particles, which are the bacteria. By cultivating these organisms in suitable fluids, such as milk, extract of meat, chicken broth, etc., they can be made to propagate rapidly, and the progeny, after many generations, will still possess the power of producing the disease when introduced into the blood of a healthy animal. But it has also been discovered that by cultivating the same virulent bacteria in a certain way, they can be so changed in their action upon the system that they will no longer produce the disease in its original severity, but give rise, by inoculation, to a modified form of the same disease which is mild, not in the least dangerous, and only local in its external manifestations. Yet this milder form of the disease is a protection against the more malignant type. Upon this fact depends the efficiency of vaccination. The disease produced by vaccination is a mild form of small-pox. The results of recent investigations leave no reasonable doubt of the protective influence of vaccination, and, while there are always a few headstrong and conservative individuals in every profession, it is not strange that there should still be a very limited number of physicians who oppose vaccination as a useless proceeding. But there are not two sides to this question, and it must be the opinion of every person who will study the subject with care, that the welfare of the community requires that vaccination should be made compulsory.

Upon every leaf and flower, in the air and in the water, from the regions of eternal snow down to the bottom of the deepest seas, the simplest forms of life are found. Among these, wherever they may be, the struggle for existence is incessant, and one has only to make use of a microscope to see the fight in progress—battles which, in miniature, portray the greater conquests of beasts and men, which have resulted in the present condition of development.

Within the microcosm of a single drop of stagnant water, may be found myriads of living forms of curious shapes and strange habits, all manifesting the powers of growth and reproduction in the simplest form. Higher in the scale the processes of life become more complex, gradually, as development proceeds, we see a differentiation of the cellular structures, so that cells subserving special purposes become distinct from the others, and this distinction becomes more and more defined as we go still higher, until finally the specialization of function results in the perfection of each organ for its work, and in the mutual interdependence of the parts which constitute the perfect whole. It is this specialization and adaptation that marks the essential distinction between the simple and the complex forms of life. It is a striking thought that all the functions of the human body have their counterpart in the structureless amœba. Yet it is more than a suggestion of fancy, since biology teaches that the development of all forms is a result of the division and the gradual differentiation of simple cells. The changes in the forms of animals, which have been gradually brought about in the struggle for existence, the adaptation to surrounding circumstances and the survival of those best fitted to withstand the conditions about them, have progressed through unnumbered centuries, until the existing forms of life have become what we find them. As the geologist reads the story of the world's long history on the leaves of solid rock, and there finds the record of its gradual evolution, through sudden catastrophes or the more slow and steady action of other influences still at work, wearing down the mountains and filling seas and valleys, so the embryologist can trace the results of the environments of centuries in the animals of to-day. For all the changes of form which have resulted in the perfect animal as it has slowly developed and been modified by external conditions, have left their records upon the germ, so that all the great features of its past history are revealed in the course of its embryological development. The modifications which were only brought about through the changes of the geologic ages, are again passed through in embryonic life, in the course of hours or days. This potency of life must first be latent in the microscopic germ—the single cell from which all living creatures spring—and while in the beginning these seem to be all alike, while many of them proceed in parallel lines as they develop, yet each one, with a strange certainty, reproduces its parent form.

The biologist no longer directs his efforts to the discovery of the essential nature of life. He may indulge in fruitless speculations, which, as in the most distant past, still possess a fascination, and lend an undefinable charm to the imagination when it is free to overstep the bounds of finite knowledge and conjure up strange fancies of those mysteries which only an infinite mind can comprehend. But in his investigations he recognizes a limit beyond which he can not go. His ultimate aim is not to discover life itself but to learn as much as possible of its manifestations, and to this end he must become familiar with the primal forms of living matter from which have grown the living world as we see it now.

The life-force endows matter with potentiality to pass through a definite series of changes until a certain result is attained, beginning with the simplest germ, and producing, as its highest result, the means of its own renewal through successive generations.

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Bacon and Microscope.—The organization of laboratories in which foreign bacon shall be examined is announced. A school, or rather a course of micrography and helminthology, will be organized, with the aim to create in France an army of inspectors, whose mission shall be to protect us against the invasions of parasites through the most useful aliments. (The editor reviews here, in a sarcastic tone, the trichinosis scare, and quotes the *Marseille Medical*): "From Feb. 24 to May 28, 1881, a special commission, under the direction of M. Marroin, made thirteen examinations, looking over 5,229 specimens of bacon. 24,839 histological preparations were made. Among these 70 were found to contain trichinæ, or an average of ⅓ per cent. These represented 1,229 barrels, containing hams, salt pork, ribs and steaks. About 9,000 barrels came under the supervision of that commission, giving an average of 0.77 trichinosed barrels in 100; or about 0.031 of trichinosed pieces in a hundred. The examinations made at Havre failed to discover any trichinæ at all.

"We must acknowledge this, that the meat exported from America presents a pretty good appearance, and could not be that of diseased animals, if we pay attention to the quantity of adipose tissue which it contains."

In view of these results, which do not render it possible to affirm in every case the wholesome nature of the meat examined, it seems that England was wise in abstaining from any coercive measures, adopting the principle that the best preventive of trichinosis consists in a good roasting or boiling of the suspected meat, and this is also a general rule in this country.—*Union Medicale et Scientifique du Nord Est, Oct.*

GLEANINGS.

The Uses of Maltine. By J. K. Bauduy, M. D. "In all diseases of general debility, wasting or atrophic affections, and in nearly all varieties of indigestion, maltine is a therapeutic auxiliary, the most valuable I have as yet encountered, and I am daily more and more convinced of its advantages. With the long and very extensive practical experience I have had of its value, I would be at an infinite loss to replace it in my daily practice, now that my confidence in its real merits has been so fully established.

"As a nutritive tonic I use it exclusively in the place of cod liver oil, and alone or in emulsion with the latter, I deem it a most important and useful therapeutic agent in pulmonary affections, and, as I have said before, in neuralgia, epileptiform complications, many varieties of paralysis, chronic and numerous other neurotic affections, I have found it a most important adjunct when combined with the standard remedies usually administered in such cases.

"In many perversions of nutrition, such as the atonic and nervous varieties of dyspepsia, maltine has a most happy effect, correcting functional gastric disturbance, improving digestion, promoting assimilation and *rapidly increasing bodily weight*."—*St. Louis Medical and Surgical Journal.*

IODIDE OF POTASSIUM IN SMALL DOSES.—Although it is the fashion at present to prescribe large doses of iodide of potassium in syphilis, with the view of obtaining rapid and permanent results, there are a number of hospital physicians and surgeons who still believe in the efficacy of small doses of this drug in that and other diseases in which it is employed. Professor A. Clark, for instance, rarely, if ever, administers the salt in doses exceeding ten grains three times daily, while other physicians are content with half that amount.

A fact worthy of consideration in this connection is that the smaller doses have a marked effect upon those patients who, by the previous use of tonics, are in a good receptive condition for any of the powerful eliminatives. More, in fact, appears to be due to the good condition of the patient at the time than the size of the dose administered. If there is a good, solid constitutional foundation to work upon, the utmost reliance can be placed upon small doses of any medicine. This seems to be pre-eminently the case with iodide of potassium.

PUERPERAL MAMMARY INFLAMMATION.—In a recent number of the *Western Medical Reporter*, Dr. Hiram Corson, of Conshohocken, Pa., says that he has for twenty-six years faithfully used poultices, liniments, washes, plasters, etc., in puerperal mammary inflammation, with indifferent success, many cases resulting in suppuration. He has abandoned all such treatment, and for more than twenty-five years has "never failed to give great comfort to the patient, and prevent the formation of pus where it had not occurred," by the application of ice. "Because pus can not be formed in the breast without the temperature of the part be a few degrees above the normal standard." He puts some pounded ice or lumps of it into a bladder, adding sufficient water to make a water-cushion. One or two thicknesses of old muslin previously dipped in cold water are laid on the breast and over that the ice-bladder. The heat rapidly diminishes, and the cure is speedily effected in every case when freely and persistently applied under. A long adhesive strap may be applied under the breast, its ends passing over the shoulders and secured to the back, not for compression, but for suspension.

On Influence of Hydrochlorate of Quinine on Malarial Germs.—By Dr. Ceci, Cerino. Dr. Ceci gave an account of experimental researches, made in the laboratory of Professor Klebs, of Prague, on the influence exerted by quinine hydrochlorate on the development of germs contained in malarial soils. A cultivation-liquid of a 5 per cent. solution of isinglass was employed, infected from different sources, and in every case it was found that the presence of very minute proportions of this salt exercised a remarkable power in preventing or checking the development of the *schizomycetes*. One part in 800 was sufficient to prevent any development of germs. The *bacilli malariæ* made their appearance very seldom in the cultivation-liquids, even when the proportion of quinine was very insignificant.—*The British Medical Journal.*

Liquid Pepsin a Solvent for Diphthertic Membrane.—In the *Lancet* of October 22, 1881, Dr. W. Hale White says that, having tried the various solvents for diphtheritic membrane usually recommended, and finding them useless, he resorted to the acid glycerite of pepsin with encouraging results. The pepsin was warmed to 110° before use, and then sprayed into the throat so as to act not only upon the large pieces of membrane lining the trachea and larger bronchi, but also that in the smaller tubes. Any one can convince himself of the power of liq. pepsin as a solvent for the membrane by putting a piece in a test-tube with that fluid and maintaining it at a temperature of 100° to 110° F.; it is digested rapidly. *Post-mortems* show no signs that the pepsin affected the healthy lungs or air-passages.

RINGER ON INFLUENCE OF AMMONIA IN CHLOROFORM POISONING.—Dr. Sidney Ringer, in a paper published in the *Practitioner*, June, 1881, p. 437, shows by experiments, the rapid influence ammonia exerted in a frog's heart, whose action had been arrested by an overdose of chloroform. The chloroform evidently paralyzes the heart's muscular substance, affecting the ganglionless and nerveless portion of the ventricle exactly in the same way as any other part of it. [In the *Medical Times and Gazette*, May, 1871, p. 616, Dr. Neild reports a case of apparent death from chloroform inhalation, which recovered from the alarming state of syncope after four half-drachm injections of liquor ammoniæ into the median cephalic vein.

DIABETES INSIPIDUS TREATED BY ELECTRICITY.—Mr. C. P. B. Clubbe reports the case of a woman, aged thirty-five, who was suffering from diuresis, and in whom iron, nux vomica, valerian, and bromide of potassium had been used without any marked effect. Faradism over the region of the kidneys was then employed every day for about twenty minutes for about twenty weeks. There was very decided improvement up to the seventh week, when the daily average of fluid passed varied slightly; improvement, however, being constant. Treatment was then stopped, and six months afterward she was no worse, though still passing from six to seven pints of urine daily. —*Med. News.*

BACTERIA.—The classification of various species of this genus of microscopic organisms has led to important results. Much crude speculation has, however, been indulged by microscopists concerning the nature and propagation of these minute bodies. Lister's great humbug has been consigned to the realm of fiction by the discovery, that bacteria develop and thrive in even the strongest solution of carbolic acid. Since the announcements of Keith and Tate of their abandonment of the Lister method, all the world seems agitated and we may yet find that out of all this, much good will come.

Who knows what the great discoveries of M. Pasteur may lead to in the study of pathological processes?

SPONGE-GRAFTING.—Dr. D. J. Hamilton has succeeded in healing old ulcers and other wounds by filling their cavities with pieces of sponge. The sponge is first prepared, and then rendered septic by steeping in a solution of carbolic acid (1 to 20). The pores become filled with leucocytes and fibrin, the neighboring capillaries project into them in the form of loops, connective tissue is formed and the sponge becomes a part of the living body. The same results follow when it is inserted into the peritoneum and between muscular fibers.—*Ed. Med. Jour.*, *Nov.*

Book Notices.

A System of Surgery, Theoretical and Practical. In Treatises by various Authors. Edited by T. Holmes, M. A. Cantab, Surgeon and Lecturer on Surgery at St. George's Hospital, etc. First American, from Second English Edition, thoroughly Revised and much Enlarged, by John H. Packard, A. M., M. D., Surgeon to the Episcopal and St. Joseph's Hospital, Philadelphia, assisted by a large Corps of the most eminent American Surgeons. In three Volumes, with many Illustrations. Vol. III. devoted to diseases of the Respiratory Organs, diseases of the Bones, Joints and Muscles, diseases of the Nervous System, Gunshot Wounds, Operative and Minor Surgery, Miscellaneous Subjects. Pp. 1059. Philadelphia: Henry C. Lea's Son & Co. Cincinnati: G. T. Craven & Co.

In the February number of the Medical News we announced the publication of the third and last volume of this great work. It is pre-eminently the most magnificent work upon Surgery that has ever been issued. It has not a competitor, and it will be a long time before it can possibly have.

As we have stated before, it is encyclopedic in its character, only that its subjects are not arranged in alphabetical order. While Mr. T. Holmes is the general editor, he is not the author. There is a very large corps of contributors—the number to the third volume being eighteen—each of the departments of surgery having been treated at length by some one who, by having given more or less special attention to it, was supposed to be particularly competent to treat it.

This work differs from other works upon surgery in that all the various diseases and accidents of surgery are exhaustively treated. Take, for instance, the Department of Diseases of Bones by T. Holmes, Esq. and revised by Thos. M. Markoe, M. D., beginning on page 119 and ending with page 397. Here we have over 250 large octavo pages, double columns to the page, in brevier type, having many excellent wood-cuts. Even a brief examination shows that everything pertaining to diseases of the bones has been treated as fully and exhaustively as could well be done in a monograph upon the subject. This department forms Part II of the work (there are in the third volume six Parts), comprehending *Simple Inflammation and its Consequences*, *Constitutional Affections*, *Non Malignant Tumors of Bone*, *Hypertrophy and Atrophy of Bone*, etc. The department does not include Fractures.

The work is sold by subscription only, ranging in price, according to binding, from $15 to $18 we believe.

Every practitioner should have it.

THE TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION, INSTITUTED 1847. Vol. XXXII. Philadelphia: Printed for the Association. 8vo. Pp. 684. 1881.

We are in receipt of the volume of Transactions as above, receiving them through the politeness of our friend, C. S. Muscroft, Sr., M. D., of this city. They do not make quite so large a book as some of the Transactions of previous years, yet we do not think they are in the least less valuable.

As our readers are aware, the thirty-second annual meeting was held at Richmond, Va., May 3, 4, 5, 6, 1881.

At a future time we hope to make use of the volume for the benefit of our readers. We have now neither time nor space for extended remarks either in regard to the volume before us or the Association as a body.

The profession are greatly indebted to the following permanent officers for most valuable labor in the interests of the Association, and for the excellent manner in which the Transactions are placed before them in book form: Wm. B. Atkinson, M. D., of Philadelphia, Permanent Secretary; Richard J. Dunglison, M. D., of Philadelphia, Treasurer; Wm. Lee, M. D., of Washington, Librarian.

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ENGLISH PIRACY OF AMERICAN BOOKS.—It is stated, in the Philadelphia *Medical News*, February 11, that the English, who prate so much about Americans pirating English medical works, are themselves guilty of the same offense.

Ward and Lock, of London, two years ago, published six of the twelve "American Health Primers," under the title of "Long Life Series," with the names of the authors, who are all American, carefully erased from the title pages, while the works themselves were so carefully edited that everything indicative of their American origin was expunged from the text. English authors get the credit of these productions. The attention of the London *Lancet* and other English medical journals has been called to this matter, but they failed to give any response. This silent justification of literary piracy on the one hand, and the fierce denunciations of it on the other, reminds one of the old adage that, in finding fault, it makes all the difference in the world, whose ox is *gored.*

EDITORIAL.

ANNUAL ADDRESS delivered before the American Academy of Medicine, at New York, by Edward T. Caswell, A. M., M. D., President of the Academy:

We are in receipt of a copy of this very interesting address, delivered at the meeting of the *American Academy of Medicine*, September 20th, 1881.

President Caswell explains the purposes of the Academy as follows: "The main object of our Academy is to bring together the educated men in our profession, to unite them to each other for the purposes of friendship and of mutual improvement, for the education of our profession, and so indirectly for the benefit of our race. These benefits and these opportunities are to inure only to those who have had the training of our colleges and universities. * * * We are then committed *ab ovo*, as it were, to the idea that none but college graduates should enter upon the study of our profession."

We have a number of times explained the objects of the Academy, and the qualifications required of its members, so that the readers of the MEDICAL NEWS generally are familiar with them. We will, however, restate that the Fellows of the Academy must be alumni of respectable institutions of learning, having received therefrom the degree of Bachelor of Arts or the degree of Master of Arts, as well as the degree of Doctor of Medicine, after a regular course of study, not less than three years.

The purpose is to encourage young men, who have the profession of medicine in view as a calling, to first take a regular collegiate course and graduate, before commencing the study of medicine. By so doing their minds will have become trained and disciplined. In other words, they will have learned how to study, when they come to study medicine. In the last number of the NEWS we demonstrated, that, like other qualifications, to study so as to be able to learn, to store up in the mind new facts and principles well digested and comprehended, training was necessary. No one, unless he has previously obtained some skill by practice, and whose mind has been somewhat disciplined by a course of training to arrange, compare, note differences, classify, etc., can take up a study, as logic, rhetoric, or mathematics, and obtain a knowledge of it. Take a man from the shoemaker's bench, or the blacksmith shop, with no more education than a knowledge of reading or writing, and put him to the study of logic—the proceeding would be ridiculous. And yet, hundreds of just such persons, every year, enter upon the study of medicine, and are graduated as physicians. We are aware that not a few of the most eminent in each of the three learned professions were not students a single day in any college or university, but this fact does not weaken in the least our position that the training and discipline received in attendance upon the regular course of a literary institution is of the utmost importance previous to commencing the study of medicine.

Elihu Burritt, the learned blacksmith, may be quoted as one who attained to much distinction as a learned man, and yet he did not belong to the schoolmen; but Mr. Burritt, while he was compelled to work eight hours a day at the anvil, in order to make a living, studied his books eight hours a day—giving eight hours to sleep. John Hunter, the greatest surgeon that ever lived, was a cabinet-maker until he commenced the study of anatomy with his brother—his education being so very limited, and his manners so uncouth in consequence of his non-association with cultivated people in early life, that his practice, for quite a number of years at the beginning of it, did not afford him a living, and he was compelled to supplement its income by instructing private classes in anatomy. But Hunter had a power of mind possessed by very few men. If he had had the benefit of a thorough collegiate education, with how much greater brilliancy would he have shone, and how much greater would have been the contrast between him and other men. Whatever brilliancy and value some stones have they owe to the labor of the artist bestowed upon them, but the rough diamond sparkles and emits brilliant rays before it has been touched by the lapidary, but with what increased luster does it shine when cut into a regular form with reference to the laws of light, and polished.

Other men could be cited who have become distinguished above others in the profession of medicine, who had the benefit, in the way of preliminary education, of nothing more than what was afforded by the village school, and, in some instances, scarcely that, but this fact only proves them to have been men of more than ordinary mental power, who were able not only to compete with, but to excel, others, at a disadvantage. It does not demonstrate, but that, with the advantages of a trained and disciplined mind in addition to their superior intellectual powers, their superiority would not have been rendered far more evident.

We quote from Dr. Caswell in regard to the number of medical students who, previous to their entering upon the study of medicine, had received the degree of A. B. or of A. M.:

> "Look at the number of young men that have graduated from our medical colleges in the present year! In round numbers it is something more than 2,500. I have not the means of knowing how many of these had received the benefits of a college course prior to their entering upon their professional studies. In only a few of the catalogues that are within my reach is any clue given. But from these few, representing as they do some of the leading medical schools, we may arrive at an approximate knowledge of this point. I refer now to the degrees of Bachelor of Arts or Master of Arts. I do not include Bachelors of Science, Philosophy, etc. The class in the Harvard Medical School graduated with 60 members, and of these, 32 had received college degrees. At the College of Physicians and Surgeons, in this city, 120 graduated, and of these, 24 had received college degrees. At the University of Pennsylvania, of 115 graduates there were 20 with degrees; and at the Rush Medical College, Chicago, 172 graduated, and but 7 had these distinctions. That is, out of 467 graduates from medical schools in the various parts of the country, but 83, or less than one-fifth, had pursued a college course. If we could obtain complete statistics on this point, I do not believe the fraction would be even as large as that. To my mind there is great ground for encouragement in the fact that in the Harvard School more than half the graduating class were men that had first taken their college degrees; and I believe that in that school the proportion will constantly increase."

We have no doubt that Rush Medical College very correctly exhibits the proportion of those who have received college degrees to the whole number graduated in Western medical colleges—about one in twenty-five.

The object of the American Academy of Medicine, which has been in existence for several years, and numbers among its members very many of the most distinguished physicians in every part of the country, is not to set off by themselves certain medical gentlemen, and claim for them all the medical learning and ability of the profession, intimating that all outside of its fold are ignoramuses and devoid of skill. While it makes the possession of the degree of A. B. or of A. M. a qualification for membership, yet there is no hesitancy in acknowledging that not a few of the most eminent physicians, under the present circumstances of education in this country, are not members and are not eligible for membership. It is the purpose of the organization that its members labor for a reform in medical education, so that those notoriously unfitted (by want of education and proper culture) for the profession, may be kept out of it by being prevented from becoming students. There need be no fear but that the worthy young man, who has been prevented by circumstances from being the possessor of collegiate honors, will find a way into the profession if he goes about to seek it, whatever may be the requirements for matriculation of the colleges.

But aside from the Academy's affording an organization of educated physicians who are pledged to bring about reform in medical education and elevate the standard of qualifications for graduation in medicine, the very existence of such an association will tend much to stimulate young men, proposing to become physicians, to seek first to graduate at a literary institution, providing that, at no distant period, the Academy should embrace among its members all the distinguished members of the profession who are eligible for membership, and, by all proper means, so increase its influence and the respect for it, both in the profession and the community, that membership of it will be regarded as an evidence of learning—as equivalent to the possession of a degree that is of a higher order than that of M. D.

A number of years ago we heard it suggested that there should be another degree besides that of M. D. to be conferred upon physicians—that of M. D. signifying merely that the possessor had passed through the prescribed curriculum of a medical college, while the other one should be conferred after a certain period of practice of medicine, and in acknowledgment of possessing certain definite qualifications, which it would be proper for every one to labor for and ask for when he thought he was in possession of those qualifications. There would be then a way of recognizing superiority, which there is not at the present time; and while the ignoramuses and incompetents might continue to obtain the degree of M. D., which would only be evidence of graduation, they would never succeed in obtaining the higher degree which would be proof of qualifications. In course of time the community would understand the meaning of the two degrees, and the more intelligent classes would seek the services of those only who held the higher degree. But since it is probably not feasible to have more than the one degree, it seems to us that membership in the *American Academy of Medicine* could be made equivalent to a degree of the kind we have mentioned, by some modification of its constitution. If the intelligent laity understood that to be a Fellow of the American Academy of Medicine (F. A. A. M.) implied learning and superior qualifications, it would afford a strong stimulus for all seeking to enter the medical profession to secure the qualifications necessary to become a Fellow.

We understand from the address that the Academy is in a flourishing condition—its membership constantly increasing. It holds annual meetings, every second year meeting in New York City. We hope it may soon elect to meet in some city of the West. Already a large number of Western physicians are members, but the number would be largely increased if a meeting was held in their midst.

COMMENCEMENT EXERCISES OF THE MEDICAL COLLEGE OF OHIO.—The Commencement Exercises of the time honored institution, the Medical College of Ohio, was held Wednesday evening, March 1, in Music Hall. There was a large attendance of matriculants, alumni, and friends of the college, to the number of several thousand. Music on the great organ, by Prof. George E. Whiting, alternated the college exercises, which were opened by Prof. W. W. Seely with congratulatory remarks upon the success of the college. The session just ended shows the largest number of matriculants of any in its history, being 342, and of these 104 have filled all the conditions necessary for graduation. Their names, with the States are as follows:

George S. Adoock, Ky.; Chas. Oscar Allen, O.; John R Allen, Ky.; Frank M. Anderson, Arthur B Ancker, O.; W. G. Armstrong, Ky.; James Milton Ayers, O.; J. N. Bartholomew, Marc L. Bond, Ind.; Michael P. Buckley, O.; Albert R. Burton, Ind ; N. E. Bradley, O.; Londus Brannon, Ind.; I. J Brooks, Ky ; James Byars. Texas; *Frank Caldwell, Galen J. Cline. O.; James W Coburn, J. Litter, Conn. Ky.; M. F. Cupp, J. W. Crum, Ind.; W. P. Crumbacker, O.; M. Cassius Craig, Ind.; Henry O. Davis, Ky,; J. Alexander Davisson, S. P. Deahofe, John A Dickey, O ; Wm. Dillon, Ill.; E. F. Everist, O.; Bart Fitzpatrick, Ind ; Alvah W. Grosvenor, James F. Hamsher, O.; Robert L. Harris, Ga.; Romeyn B Hart. Ind.; Benjamin F. Hatfield, Ind.; Wm. E Hervey, W. Va.; James L Henderson, Pa.; Joseph G. Hirons. G. L. Hines, James L. Holden, O.; J. Bernard Houston, W. Va.; J. A. W. Hughey, John W. Hulick, Frank Humphreys, O.; J. Oliver Jenkins, Ky.; J. P. Johnston, Pa.; Frank L Kinsey, John R. Lancaster, Benjamin F. Lyle, S. A. Marshall, J. F. Maxwell, O.; T. T. Metcalf Ky.; Edwin W. Mitchell, O.; T. J. Moneyhon, Ky ; D. B. Mory, O ; Arthur S. McDaniel, Texas: Richard McCarthy, Ill.; William C. McCord, Pa.· M. S. McCormack, Ind.; John G. McDougal, H. McElwee, N. T. McTeague, O ; William Neal, Ill.; Charles W. Newland, John Nixon, A. P. Ormsby, Ind.; E. L. Paulding, O.; G. R Peckinpaugh, Ind ; LeRoy Pence, Christopher L. Pindar, O.; Laban B Plummer, Ky.; E. H. Pocock, John W. Prendergast, O ; B. Knox Rachford, Ky.; F. A. Roeder, Germany; Charles A. Rollins, John Allen Romspert, O ; Myron G. Rood, Wis.; John A. Roseberry, O.; Andrew J. Rule, Ky.; Henry Schoenfeld, O.; John C. Sexton, Ind.; John D. Sidebottom, Ky.; John M. Sisler, O.; John S. Smith, Ind.; G. A. Sprecher, O.; James Knox Steuart, Ind.; A. H. Stewart. Ky.; Robt. W. Stewart, O.; W. L Stephens, Ky.; Henry L. Taylor, Orange H. Thomas, Henry B. Thompson, O.; Robert D. Tilton, Ky.; S M. Townsend, Ind.; Albert R. Touvelle, Samuel Toman, O.; Thomas W. Tuggle, Ga.; J. T. Wallingford, Ky.; J. P. West, O.; Charles C. Whitsitt, W. Va.; P. M. White, O.; Hamilton H Wilcox, Minn.

The graduates were called up in sections of twenty-six each, and received their diplomas from the hand of Hon. Flamen Ball, President of the Board of Trustees. Hon. H. C. Whitman, as a Trustee of the college, read a brief address, opening with a eulogy of the institution, that had done its duty by the graduates, and devoted mainly to enjoining upon the class the importance of entertaining high aims in the practice of their profession, of the cultivation of agreeable manners, of neatness in dress, and the avoidance of professional bigotry.

The presentation of Dr. W. W. Seely of the prizes awarded by each professor in his department followed, and each testimonial of merit was followed by the customary enthusiastic applause. The names of the Professors, with their honor men, the gifts, and subjects for excellence in which they were earned, are as follows:

Prof. Forchheimer—Physiology—a microscope; taken by Dr. S. P. Deahofe, Potsdam, O.

Prof. Seely—Ophthalmology—gold medal; taken by Dr. Frank Caldwell, Cincinnati.

Prof. Hyndman—Medical Chemistry—a microscope; taken by Dr. Orange H Thomas, Findlay, O.

Prof. Conner—Anatomy—gold medal; awarded to Dr. Henry L. Taylor, Cincinnati.

Prof. Nickles—Materia Medica—gold medal; awarded to Dr. Edwin W. Mitchell, Delaware, O.

Prof. Whittaker—Theory and Practice of Medicine—post mortem case of instruments; awarded to Dr. Frank Caldwell, Cincinnati.

Prof. Dawson—for the best bandaging—gold medal; Mr. Lester Taylor, Gallipolis.

Prof. Dawson—for best drawing—gold medal; Dr. J. Oliver Jenkins, Morning View, Ky.

Prof. Dawson—for best dissection—gold medal; Dr. Hamilton H. Wilcox, Glenville, Minn.

Prof. Reamy—Obstetrics—gold medal; awarded to Dr. Christopher L. Pindar, Dayton, Ky.

Prof Palmer—Gynecology—case of gynecological instruments; awarded to Dr. Edwin W. Mitchell, Delaware, O

Prof. Ransohoff—Descriptive Anatomy—gold medal; awarded to Dr. B. Knox Rachford, Alexandria, Ky.

Good Samaritan Hospital internes are: Dr. Edwin Lyttleton Paulding, Piqua, O.; Dr. Joseph G. Hirons, Buford, O.; and Dr. James Nelson Bartholomew, Stockwell, Ind.

Cincinnati Hospital internes are: Walter Christopher, Louis Schwab, Frank Tripp, all of Cincinnati.

Faculty prize—best papers in all departments—gold medal; awarded to Dr. B. Knox Rachford, Alexandria, Ky.

These were succeeded by the customary presentation of a vast number of bouquets by friends of the several graduates.

The honor of delivering the valedictory address fell upon Prof. Jas. G. Hyndmann, M. D., who treated in a very practical and efficient manner the question of the division of the science and practice of medicine among specialists, holding that with the growth of medical information specialists have become a necessity, and that the tendency, especially in cities, must continue to be in the direction of greater division.

Moral (Affective) Insanity.—We have received from the author, Dr. C. H. Hughes, of St. Louis, a pamphlet of several pages devoted to the discussion of this subject. Dr. Hughes, of course, is a believer in Moral Insanity, *i. e.*, in a perversion of the affective faculties or moral feelings independent of any affection of the intellect; and he certainly is quite successful in advocating his views.

Believing that our readers would be interested in them, we have thought that we would present a few of his arguments. They are not all new by any means. Many of the facts mentioned have been observed by all close observers, yet the evidences employed of the existence of disordered feelings are stated in quite a convincing and interesting manner. In speaking of kleptomania, pyromania, dipsomania, homicidal and suicidal impulses, and the morbid displays of pregnant women, and the mind disorders connected with the critical periods of woman's life, he says: "It is conceded that they may have their starting point in uterine disorder, even with more unanimity and certainty than puerperal mania, for the latter is often as much an insanity of general hemic and neuric exhaustion—aneuria and shock—as of reflex irritation. And, if reflex insanity be conceded, the possibility of moral insanity must be admitted, for the concession acknowledges the varying shades of mental involvement, depending upon the degree and source of the reflected irritation, from the insane longings and freaks of pregnancy to the infanticidal and other morbid impulses of *postpartum* cerebrasthenia. To concede the possibility of a homicidal or other morbid impulse not founded in delusion (and psychiatry furnishes abundant proofs of such impulses), is to admit the basis fact of moral insanity as it is clinically observable, namely, insanity not the *result* of reason perverted by disease."

The reasoning of the author is certainly very plausible. Every physician acknowledges the fact that pregnant women, now and then, will exhibit a moral perversity entirely foreign to their nature when not *enceinte.* Ladies of the most undoubted integrity have been known, when pregnant, to purloin articles not their own. In such instances the condition of the uterus must act in a reflex manner upon the brain, producing a morbid condition of the feelings, without at all disturbing the intellectual faculties; for these persons do not manifest any disturbance of the intellect—their reasoning faculties being intact. If, then, an irritation of the uterus will bring about a reflex insanity, the possibility of moral insanity, as Dr. Hughes says, must be admitted.

The Doctor, in a foot-note, proceeds to mention the fact that Tilt saw a case where pressure upon an inflamed ovary excited epileptic fits. He says he has seen himself a vaginal injection cause a maniacal paroxysm, some of the injected fluid having passed up into the uterine cavity. Sir Benjamin Brodie brought on a fit of chorea by gentle pressure over the stomach, and the effect of a smart blow in producing faintness is so well known to the prize ring that it is considered foul to hit below the belt. "But these effects," he says, "are not more singular than the irritation of dentition, or worms, or undigested substances in the alimentary canal, causing infantile convulsions, the effect of a fistula in causing melancholia with impulse to suicide, passing away after a successful operation, the many eccentric sources of epilepsia, tetanus, cerebral irritation, etc." To these examples mentioned by Dr. Hughes may be added the well-known depressing influences upon the mind produced by dyspepsia, and other disorders of the stomach. Every one has experienced the irritability of temper and bad humor caused by a temporary indigestion. Chronic indigestion has often produced the most profound melancholia; and many an individual has been led to take his own life, who would never have thought of committing violence upon himself if digestion had been normal.

The author very correctly remarks: "The emotions and the intellect are not twin born, though they mutually influence each other. They do not always go hand in hand, or dwell harmoniously together, though tenanted together in the brain. In good cerebral organizations they are often at war with each other. The things which even sane men ought not to do, they often do; and those they ought to do they sometimes do not."

"The Apostle Paul," he says, "confesses this of himself. If a Saint can concede this much of a healthy mind, a sinner can do no less for the victim of disease. Paul was a good pychologist, and discerned, though unconscious of their physiological foundation, the ganglionic source of certain encephalic states. He was 'constantly at war with his members.' When he 'would do good, evil was present with him.'"

The Essayist says that men in their sanest states are often more influenced by their feelings, prejudices, and passions than by their judgments. We feel ourselves that the observations of every one will, at least, to some extent, confirm the correctness of the statement. With some men it will be previously known that they will act in a certain way under particular circumstances, and that other men, under the same circumstances, will act in quite another way—sometimes diametically different—yet both parties, in both of the instances, will protest against imputing their actions to feeling. But how can it be otherwise than that the affective faculties have governed in one or both of the cases? for, if reason alone controlled, the results would have been the same. Conduct under particular circumstances, founded upon reason, can not take one course one day and another course on another day with the same person, nor can it vary with different persons.

The feelings are so generally acknowledged to influence the conduct unconsciously, that the law declares a man to be incompetent to serve as a juror in a suit if he has before learned anything about it, or if he be a most distant relative of, or has had at any time any business connection with, either of the contestants. "The restlessness and constant muscular activity of many lunatics," says Dr. Hughes (We witness the same phenomenon in many sane persons. Some persons are remarkable for not being able to be quiet a moment as regards muscular movement), is not always the expression of disordered intellection, so much as it is an accompaniment simply of morbid feeling, or irritation of psychomotor centers, and sometimes the acts of the insane, if their after confessions in seemingly lucid intervals may be taken as even approximately true, are not unfrequently independent of both conscious thought and feeling."

We will close our article by another quotation from Dr. Hughes' pamphlet:

"To assert that the doctrine of moral insanity is a dangerous one, from which society may suffer, as Mayo and his followers have done, is to render science subservient to social polity, illogical, cowardly and, of course, unscientific, whereas social polity should be ever subservient to scientific truth, whatever that may be revealed to be. Let us always speak according to our convictions. If we trim and prune truth so that we may adapt it to social expediency, we become "false" lights—we degrade science, the scepter of influence falls from us, and judicial wrongs, even murder perpetrated by strong-handed Law upon the weak and miserable, will continue to be committed in our name, and be the lasting monument of our disgraceful surrender of truth.

"There *is* moral perversion and degeneration resulting from disease, with but little, if any, appreciable intellectual lesion, less intellectual lesion oftentimes than we find in those whose lives have been given up to vice, through self-will or parental coercion or evil communication. Then let us, when occasion demands, tell the courts so, and not say we can not conceive it possible for moral derangement to exist without concomitant intellectual aberration while observable facts confute such theories, and let us turn our attention to searching out, for the aid of jurists, instead of ignoring, the line of demarkation between responsible and irresponsible vice; the characteristics of disease on the one hand, and on the other, voluntary moral depravity coupled with a body sound and a mind free to choose.

"Moral insanity constitutes an observed and observable fact of psychology; let us not seek to theorize it out of existence."

THE POISON OF SALIVA.—Some exceedingly interesting and important results have followed the study of the poisonous alkaloids which are developed in the animal organism after death, and no less curious, and, probably, no less important, discoveries have recently been made in regard to the toxic effects of a secretion of the living animal hitherto regarded as innoxious. Dr. Sternberg, of New Orleans, who has, under the direction of the National Board of Health, been engaged in the study of causes and development of epidemic diseases, recently read a paper before the Biographical Society of Washington, on a fatal form of septicæmia in the rabbit, produced by hypodermic injection of human saliva. These experiments indicate that normal human saliva is, when administered in this manner, hardly less fatal than the venom of serpents. Rabbits, so treated, died invariably within forty-eight hours; Guinea pigs are less susceptible than rabbits, dogs resist the poison still more strongly, while fowls escape entirely. The saliva of some people is more venomous than that of others; the general fact seems, however, well established, that this secretion, harmless, when taken into the digestive canal, possesses highly toxic properties when introduced directly into the blood. M. Gautier, a distinguished French savant, has recently published the result of a similar investigation, and this gentleman, who found the salivary secretion intensely poisonous to birds as well as animals, came to the conclusion that the saliva of the human being was similar in its action to the venom of the cobra, the symptoms, both as respects the period of coma, excitation, convulsions and tetanic contraction, following in the same sequence.

A further confirmation of this is afforded by the studies of M. Lacerda, of Brazil, just communicated to the Biological Society, who has discovered that the venom of certain poisonous serpents possesses the power of digesting albuminous substances and emulsifying fats, leading to the conclusion that its primary office is strictly analogous to that of the saliva, and it has long been known that the venomous secretion of various snakes could be swallowed with impunity. Dr. Sternberg inferred that the poison of saliva is due to bacteria, but M. M. Lacerda and Gautier arrive at a different conclusion. Both the latter ascertained that its toxic principle was not destroyed by heating to a point that would destroy these organisms, and the former showed that saliva, when allowed to become bacterial, developed different symptoms from the fluid when free from them, and the latter excludes from its deportment with reagents that the poisonous principle belongs to the ptomaines.

THE PRACTICE OF MEDICINE; A BUSINESS OR CHARITY?—The article of Dr. E. H. Cobleigh entitled as above seems to have attracted a very great deal of attention everywhere. The *New England Medical Monthly* speaks of it as the best article on the subject it treats, it has ever met. Besides, we have received letters from all over the country commending it.

Every sensible physician must agree with the author that it is high time the practice of medicine should be conducted on business principles, as is the case with other business. To do so, there must be done away the twaddle and nonsense mentioned by Dr. C., of "our noble calling," "our mission of charity," and such like cant and sentimentality, and announce that we practice medicine for the money return, the same as a lawyer practices law or a preacher preaches (the clergy are now receiving six and eight thousand dollars a year in cities) for financial profit, and the banker and merchant conduct their business for lucre. A man who contracts a debt for furniture, dry goods, or groceries regards it quite in place to be served with a bill for the same, but not a few when handed a bill for medical services have their disgust excited. They think a physician is not much devoted to his profession, has not much professional dignity in him, is poorly impressed with the nobleness of his calling, who duns people for money.

Physicians themselves are much to blame for this state of affairs; and it behooves them to address themselves to bringing about a reform. We really hope that Dr. Cobleigh's article will make a beginning for reformation. We are happy to announce that he designs to supplement the article by another one soon.

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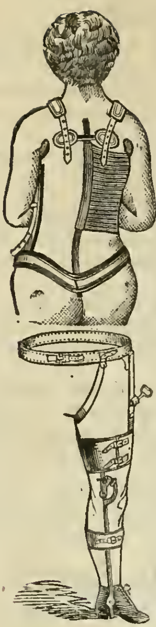

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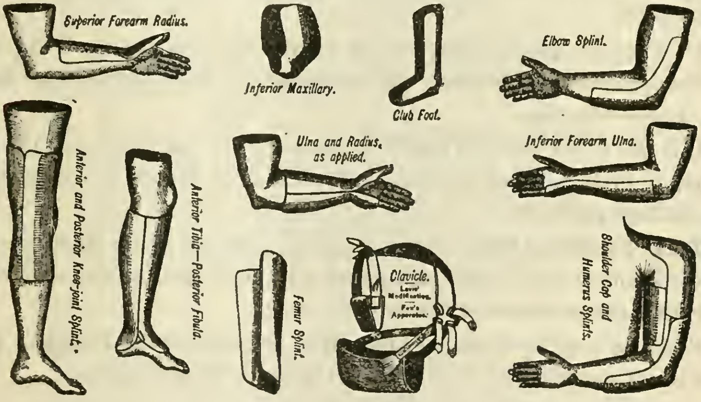
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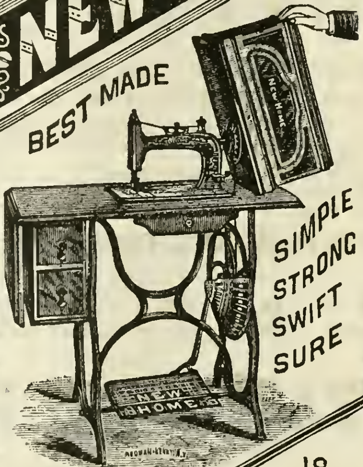

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